SANYO

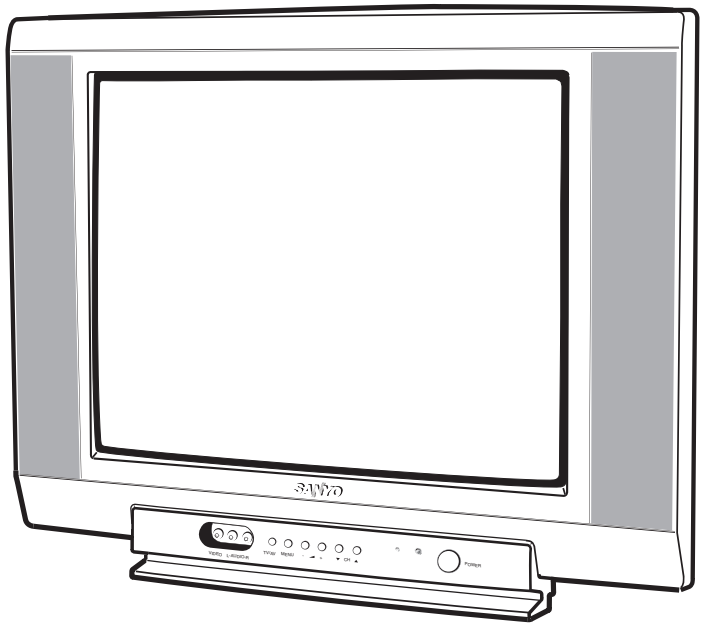
FILE NO.

# SERVICE MANUAL Colour Television

## Model No. CP21VF1

(Australia / New Zealand)

**Service Ref. No. CP21VF1-00**
**CP21VF1-50**



## Specifications

**Power Source** . . . . . .AC127−240V, 50/60Hz.
**Colour System** . . . . . .PAL, SECAM, NTSC4.43, NTSC, PAL 60Hz
**Television System** . . . . .B/G, D/KK', I, M/M
**Channel Coverage** . . . . .VHF: E2-E12, R1-R12, K1-K9, J1-J12, A2-A13
UHF: 21-69, A14-A69, J13-J62
CATV: S1-S41, X, Y, Z, Z+1, Z+2
**Video IF** . . . . . .38.0 MHz
**Aerial Input Impedance** . 75Ω
**Ext. Terminals**
Video inputs: Phono jack × 2 (1.0Vp−p, impedance 75Ω)
DVD Input: Component Video Jack-Y × 1 (1.0Vp-p, impedance 75Ω)
Component Video Jack CB/CR × 1 (0.7Vp-p, impedance 75Ω)
Audio inputs: Phono jack (L/R) × 2 (436mVrms, impedance more than 40KΩ)
Video monitor output: Phono jack × 1 (1.0Vp−p, 75Ω)
Audio monitor outputs: Phono jack(L/R) × 1(436mVrms, Impedance less than 600Ω)
**Speaker** . . . . . 5 cm × 9 cm × 2 pcs.
**Sound Output (RMS)** . . . 5W + 5W
**Dimensions** . . . . . 580 (W) × 460 (H) × 468 (D)mm
**Weight** . . . . . approx. 20.5 Kg

*Specifications subject to change without notice*

**Product Code: 113012316**

**Original Version**

**Chassis Series: AC7-A**

**– NOTE –**
Service Ref. No. CP21VF1-00 is electrically the same as Service Ref. No. CP21VF1-50.
The difference between Service Ref. No. CP21VF1-00 and CP21VF1-50 is as follow:
1) Destination CP21VF1-00...Australia
CP21VF1-50...New Zealand

Give complete "SERVICE REF. NO." for parts order or servicing. It is shown on the rating plate at the cabinet back of the unit.

This T.V. receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specification table.

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# Safety Notice

## SAFETY PRECAUTIONS

1: An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.

2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.

3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.. Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.

## X-RADIATION PRECAUTION

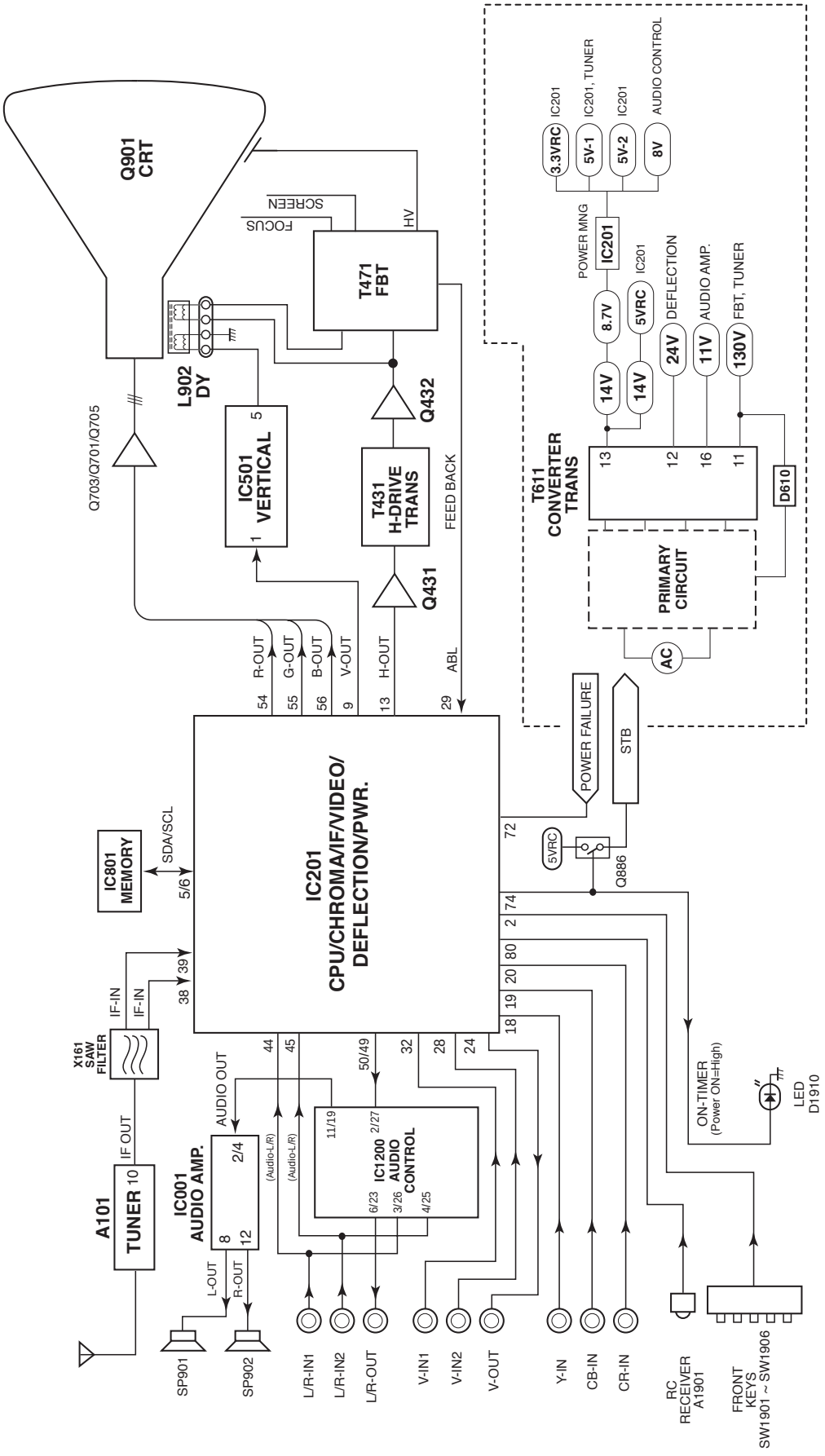
The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X - RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for + B1 volt power supply adjustment, and high voltage check to maintain the high voltage within the specified limits.

## PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark ⚠ . No deviations from resistance

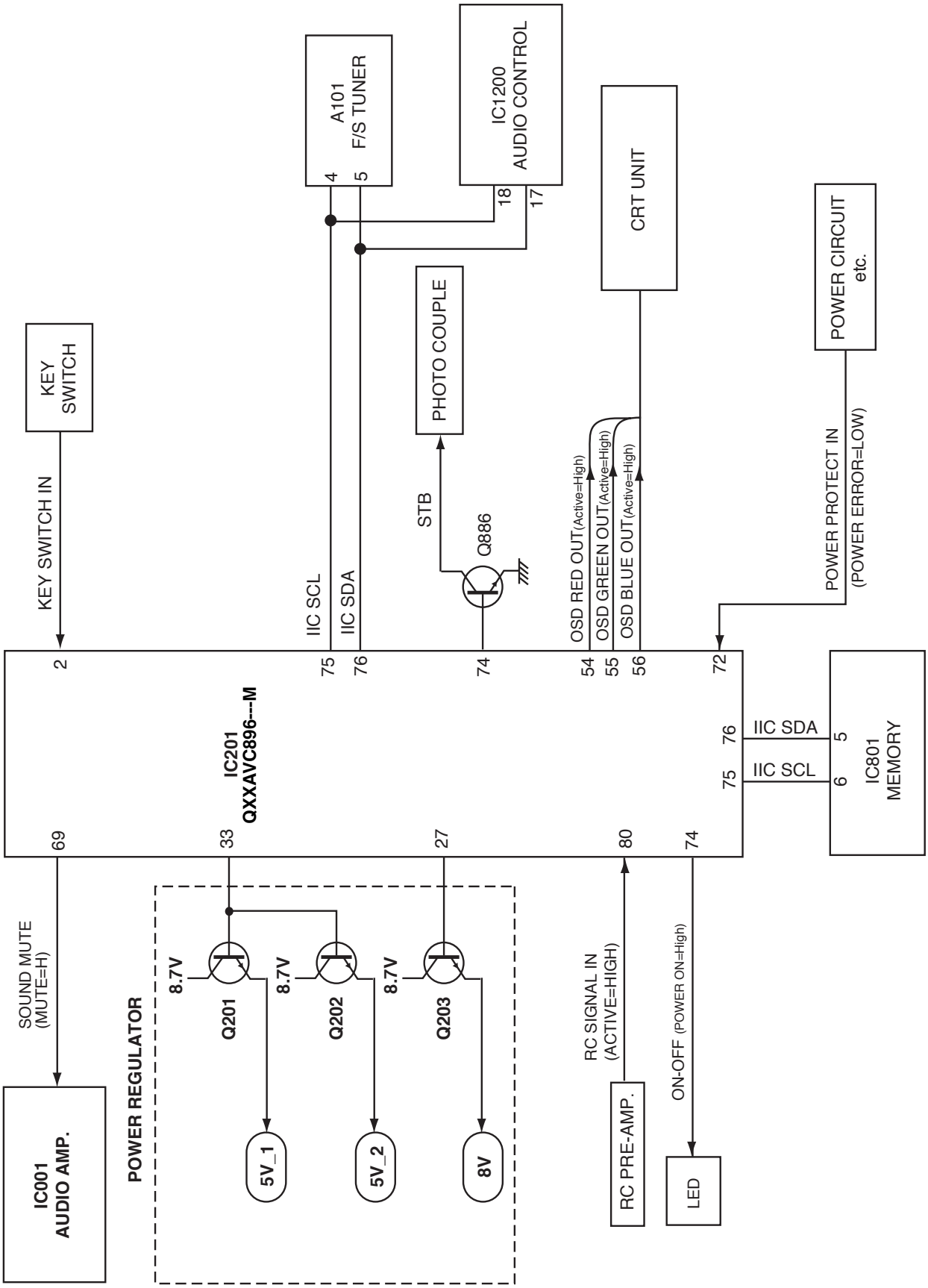
wattage or voltage ratings may be made for replacement items designated by mark ⚠ .

# Chassis Block Diagrams



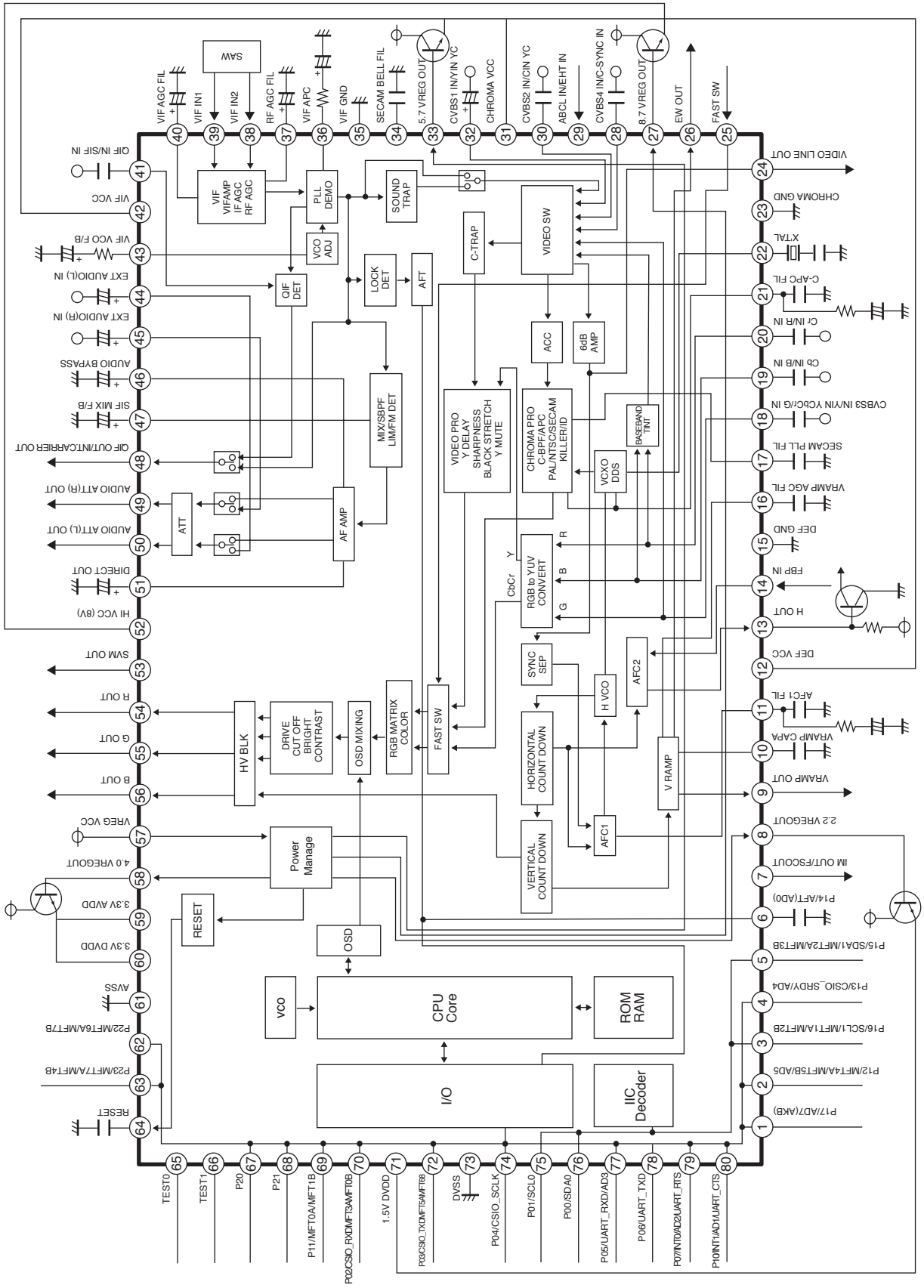
# Chassis Block Diagrams

System Control



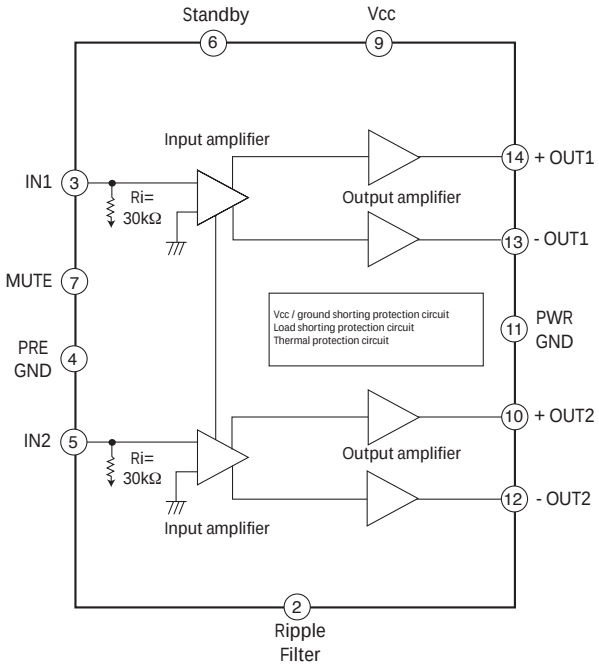
# IC Block Diagrams

IC201 < CPU/IF/Video/Chroma/Def.> R2J12203M4-XXXFP

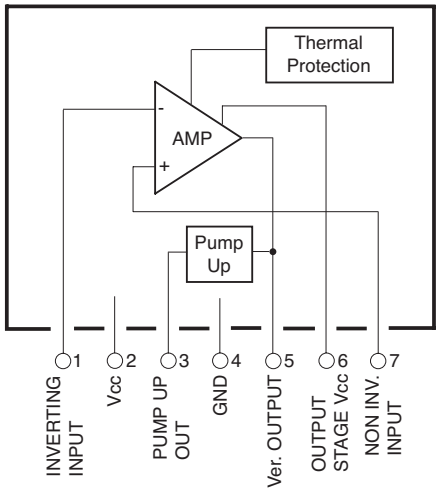


# IC Block Diagrams

IC001 < Audio AMP.> LA42205-E




IC501 < Vertical Output > LA78040B-E

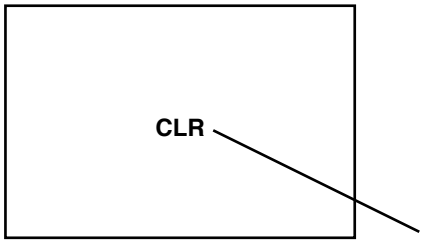


# Service Adjustments with Replacing Memory IC(IC801)

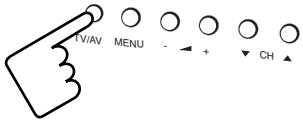
Note: The CPU (IC201) and memory IC (IC801) store the service adjustments data and controls data for each circuit.When the Memory IC(IC801) is replaced, some of the service adjustments should be readjusted to obtain the best performance. The necessary service adjustments are carried out by using the RC handset. Please set up the TV set with following steps [1] to [2].

## [1] Initializing Procedure

**1.** Put a new memory IC.
**2.** Turn on the TV set.
**3.** Press and hold the **TV/AV Selector** on the TV set for more than 2 seconds. The following picture appears on the screen.

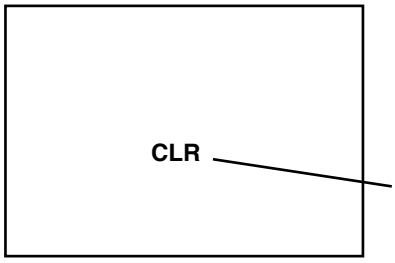



(displayed in yellow color)

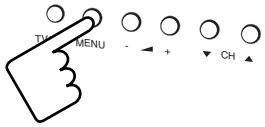



Press and hold for more than 2 seconds

**4.** Press the **MENU** on the TV set while the above On-Screen Display is still on the screen. The following picture appears on the screen.




(displayed in red color)




**5.** Switch off the TV set by pressing the **Power Switch button** on the TV set while the above On-Screen Display is still on the screen.

This completes the initialization of memory IC.

Following shows the initialized contents of memory data by this procedure.

- Plug & play : No executed
- Inhibit data : Cancelled
- Ch skip data : Cancelled
- Sound volume data : 10/63 steps.
- Volume Lock : OFF
- Colour system : AUTO

## [2] Required Service Adjustments

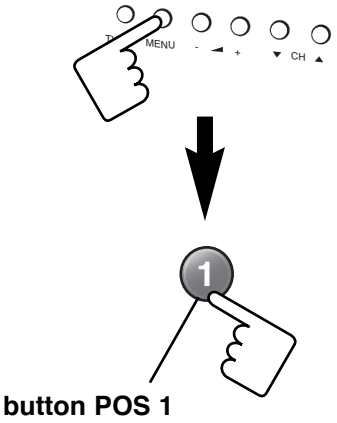
Readjust the following service adjustments.

| **Adjustments** | **Service Mode No. & Item** |
|---|---|
| RF AGC | Item 105, RF DELAY ADJ |
| Horizontal centre | Item 18, H-PHA (PAL) |
| Vertical Position | Item 16, V-SHIFT |
| Vertical linearity | Item 12, V-LIN |
| Vertical-S correction | Item 14, V-SCO |
| Gray scale | Item 167 ~ 171 |

Further adjustment please refer to page 14 and 15.

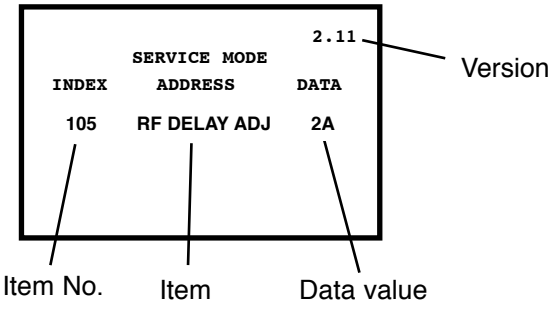
## [Entering to Service Mode]

**1.** Press and hold the **MENU** button on the TV set and press the **numeric 1** button on the Remote Control. Following setting items appears on the screen.

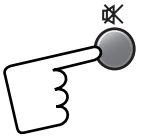



**button POS 1**

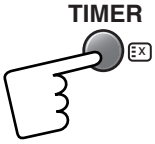
Display for [RF DELAY ADJ] RF AGC adjustment




**2.** Select item by pressing the **SOUND MUTE** (Item No. UP) or **TIMER** (Item No. DOWN) button on the remote control handset.



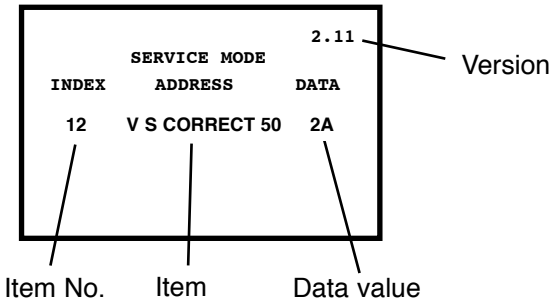
01➔02➔03➔04➔05.....200



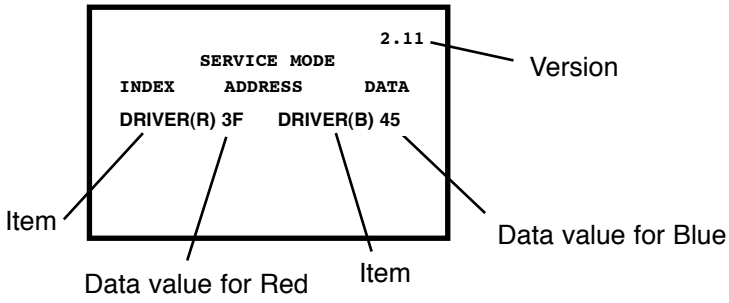

200...96➔95➔94➔93➔.....01

**Example**

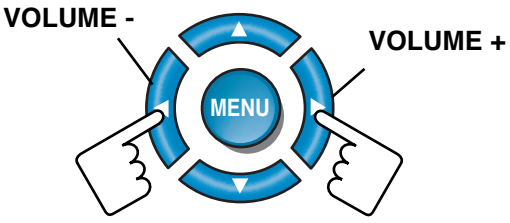
Display for [V-SCO] V-S Correction adjustment




Display for [DRV] White balance adjustment




**3.** Adjust data value by pressing the **VOLUME +** or **VOLUME –** button on the remote control handset.




To return to normal TV mode, press the **MENU** button on the TV set or the remote control handset.

# Service Adjustments with Replacing Memory IC(IC801)

Following table shows the initial values which have been stored in the CPU ROM, and items for the service adjustments.

**Service mode adjustments table in CPU ROM**

| No. | Item | Range | Data | Description |
|---|---|---|---|---|
| 01 | VIF VCO ADJ | 0 ~ 3F | 1E | VIF VCO free-running frequency fine adjustment |
| 02 | STRAP ADJ | 0 ~ 3F | 9 | SOUND trap free-running frequency fine adjustment |
| 03 | H VCO ADJ | 0 ~ F | 08 | HORIZONTAL VCO free running frequency fine adjustment |
| 04 | SECAM BLK LEVEL (R) | 0 ~ 3F | 33 | SECAM-(R-Y) signal black level adjustment |
| 05 | SECAM BLK LEVEL (B) | 0 ~ 3F | 11 | SECAM-(B-Y) signal black level adjustment |
| 06 | V SIZE 50 | 0 ~ 3F | 34 | V Ramp amplitude adjustment (Vertical Size) for PAL |
| 07 | V-SIZE 50 ZOOM | 0 ~ 3F | 0 | V-Size for Zoom Mode PAL |
| 08 | V-SIZE 50 WIDE | 0 ~ 3F | 0 | V-Size for Wide Mode PAL |
| 09 | V-SIZE 60 | -1F ~ 20 | 0 | V Ramp amplitude adjustment (Vertical Size) for NTSC |
| 10 | V SIZE 60 ZOOM | -1F ~ 20 | 0 | V-Size for Zoom Mode NTSC |
| 11 | V SIZE 60 WIDE | -1F ~ 20 | 0 | V-Size for Wide Mode NTSC |
| 12 | V S CORRECT 50 | 0 ~ 3F | 22 | V-S Correction control for PAL |
| 13 | V S CORRECT 60 | -1F ~ 20 | -6 | V-S Correction control for NTSC |
| 14 | V LINEARITY 50 | 0 ~ 3F | 23 | V Linearity control for PAL |
| 15 | V LINEARITY 60 | -1F ~ 20 | 3 | V Linearity control for NTSC |
| 16 | V SHIFT 50 | 0 ~ F | 4 | V Ramp start timing point adjustment 2 line/step (V position) for PAL |
| 17 | V SHIFT 60 | -7 ~ 8 | -3 | V Ramp start timing point adjustment 2 line/step (V position) for NTSC |
| 18 | AFC2 H PHASE 50 | 0 ~ 1F | F | Horizontal Phase (H-Position) adjustment for PAL |
| 19 | AFC2 H PHASE 60 | -0F ~ 10 | 02 | Horizontal Phase (H-Position) adjustment for NTSC |
| 20 | CONTRAST CONTROL | 0 ~ 2F | 1F | Contrst Control (Offset Data) |
| 21 | BRIGHTNESS CONTROL | 0 ~ 3F | 33 | Brightness Control (Offset Data) |
| 22 | TINT CONTROL TV | -3F ~ 40 | 0 | Tint Control (Offset Data) for TV |
| 23 | TINT CONTROL AV | -3F ~ 40 | 0 | Tint Control (Offset Data) for AV |
| 24 | SERVICE SW | 0 ~ 1 | 0 | Vertical Output ON/OFF Switch (Contrast Control) |
| 25 | VRAMP OFF | 0 ~ 1 | 0 | Vertical Output ON/OFF Switch ON/OFF |
| 26 | V AGC SPEED UP | 0 ~ 1 | 0 | V Ramp AGC Speed |
| 27 | Y/C TEST ON | 0 ~ 1 | 0 | |
| 28 | HVCO FREERUN UP | 0 ~ 1 | 0 | Horizontal free-running frequency up |
| 29 | HALF H KILLER | 0 ~ 1 | 0 | Composite-Sync Half H Kill |
| 30 | H FREE | 0 ~ 1 | 0 | Horizontal forced free-running mode switch |
| 31 | H START | 0 ~ 1 | 0 | Horizontal output switch |
| 32 | AFC1 PULL UP | 0 ~ 1 | 1 | Horizontal AFC1 gain switch |
| 33 | HVCO PULL UP | 0 ~ 1 | 0 | Horizontal VCO Filter PULL UP |
| 34 | HVCO PULL DOWN | 0 ~ 1 | 0 | Horizontal VCO Filter PULL DOWN |
| 35 | AFC1 GAIN UP | 0 ~ 3 | 0 | Horizontal AFC1 gain switch |
| 36 | ACFQ IF CONT | 0 ~ 1 | 1 | AFC1 gain controlled by IF AGC |
| 37 | DOUBLE COINCI | 0 ~ 1 | 0 | Horizontal AFC1 Gain Controlled by FAST Horizontal Coincidence |
| 38 | AFC2 RAMP UP | 0 ~ 1 | 0 | AFC2 RAMP UP |
| 39 | FBP BTHL | 0 ~ 1 | 0 | FBP slice level switch |
| 40 | AFC2 GAIN UP | 0 ~ 3 | 3 | Horizontal AFC2 gain switch |
| 41 | HBLK RIGHT | 0 ~ 3 | 1 | Control edge of horizontal blanking pulse that is right side of picture |
| 42 | HBLK LEFT | 0 ~ 3 | 0 | Control edge of horizontal blanking pulse that is left side of picture |
| 43 | HBLK SEL | 0 ~ 1 | 1 | Horizontal blanking select |
| 44 | HD SEL | 0 ~ 1 | 1 | Horizontal time pulse for OSD |
| 45 | HV BLK OFF | 0 ~ 1 | 0 | H and V blanking off switch for RGB-OUT |
| 46 | BGP SHIFT | 0 ~ 3 | 0 | Burst Gate Pulse for Position Adjustment |

# Service Adjustments with Replacing Memory IC(IC801)

| No. | Item | Range | Data | Description |
|---|---|---|---|---|
| 47 | SECAM BGP SHIFT | 0 ~ 3 | 3 | Burst Gate Pulse for Position Adjustment |
| 48 | BGP SEL | 0 ~ 1 | 0 | Burst Gate Pulse Mode Select |
| 49 | PSEUDO H COIN | 0 ~ 1 | 0 | Horizontal coincidence detection by fsc counter |
| 50 | AUTO SLICE LEVEL | 0 ~ 7 | 0 | Sync separator slice level down |
| 51 | SECAM BLK LEVEL (B) | 0 ~ 1 | 0 | Sync Separator Gain Up at Vertical Sync |
| 52 | AUTO SLICE SPEED UP | 0 ~ 1 | 0 | Auto Slice Speed Switch (Normal / Up) |
| 53 | AUTO SLICE SPEED DN | 0 ~ 1 | 0 | Auto Slice Speed Switch (Normal / Down) |
| 54 | AUTO SLICE DOWN | 0 ~ 1 | 0 | Sync detect level switch during video period. |
| 55 | HV FREE | 0 ~ 1 | 0 | Horizontal and Vertical forced free-running mode switch |
| 56 | V SYNC DET TIME | 0 ~ 7 | 0 | Vertical sync detect minimum time switch |
| 57 | V SYNC DET MODE | 0 ~ 1 | 1 | Vertical sync detect mode select |
| 58 | MACRO OFF | 0 ~ 1 | 0 | Switch to improvr macrovision signal ON/OFF |
| 59 | VBLK STOP | 0 ~ 1 | 0 | Vertical blanking stop |
| 60 | EQ LATCH OFF | 0 ~ 1 | 0 | AFC1 stop timing shift |
| 61 | HBLK STOP | 0 ~ 1 | 0 | Horizontal blanking stop |
| 62 | VRAMP TEST | 0 ~ 1 | 0 | Vertical Ramp Out Test |
| 63 | V 1 WINDOW | 0 ~ 1 | 0 | Vertical sync detect mode select |
| 64 | V FREE2 | 0 ~ 1 | 0 | Vertical free-running mode when horizontal coincidence is low |
| 65 | V FREE | 0 ~ 1 | 0 | Vertical forces free-running mode switch |
| 66 | FORCE V MODE | 0 ~ 3 | 0 | Vertical frequency mode switch |
| 67 | V STD DET OFF | 0 ~ 1 | 0 | Vertical frequency standard / non-standard detection |
| 68 | V STD DET2 | 0 ~ 1 | 0 | Vertical frequency standard / non-standard detection |
| 69 | V FREE FREQ | 0 ~ 1 | 0 | Vertical free-running frequency |
| 70 | OSD VD DELAY | 0 ~ 1 | 0 | VD TIMING delay for OSD TIMING |
| 71 | W VBLK ON | 0 ~ 1 | 1 | Vertical blanking wide mode 16:9 |
| 72 | VLOGIC STOP | 0 ~ 1 | 0 | Vertical count up logic stop |
| 73 | VBLK TEST | 0 ~ 1 | 0 | V blanking control |
| 74 | WIDE VBLK TOP | 0 ~ F | 0 | Vertical blanking top adjustment 16:9 |
| 75 | WIDE VBLK BOTTOM | 0 ~ F | 5 | Vertical blanking bottom adjustment 16:9 |
| 76 | OSD CONT CLIP LEVEL | 0 ~ 3 | 1 | Contrast control clip level of OSD mode |
| 77 | OSD CONT CLIP OFF | 0 ~ 1 | 0 | Contrast control clip switch of OSD mode |
| 78 | DRIVER (R) | 0 ~ 7F | 3F | R OUT amplitude adjustment by 7 bits DAC |
| 79 | BLUE BACK | 0 ~ 1 | 0 | Blue back mode ON/OFF switch |
| 80 | DRIVER (R) | 0 ~ 7F | 3F | B OUT amplitude adjustment by 7 bits DAC |
| 81 | WHITE BACK | 0 ~ 1 | 0 | White raster mode ON/OFF switch |
| 82 | TEST PATTERN | 0 ~ 1F | 0 | SCREEN TEST MODE |
| 83 | PEAK ACL | 0 ~ 1 | 0 | PEAK ACL MODE ON / OFF |
| 84 | ABCL | 0 ~ 1 | 0 | ABCL ON / OFF Switch |
| 85 | ABCL GAIN | 0 ~ 1 | 0 | ABCL Gain Low / High Switch |
| 86 | DCT LEVEL | 0 ~ 7 | 0 | DC Transfer Level Control |
| 87 | DCT ON | 0 ~ 1 | 0 | DC Transfer select ON / OFF |
| 88 | COLOR CONTROL PAL | 0 ~ 10 | 0 | Color Saturation control (Offset Data of Color) for PAL |
| 89 | COLOR CONTROL NTSC | 0 ~ 10 | 0 | Color Saturation control (Offset Data of Color) for NTSC |
| 90 | COLOR CONTROL SECAM | 0 ~ 10 | 0 | Color Saturation control (Offset Data of Color) for SECAM |
| 91 | TAKE OFF | 0 ~ 1 | 1 | Chroma BPF / Take Off switch |
| 92 | C KILLER LEVEL | 0 ~ 1 | 0 | Color killer sensitivity threshold switch |

# Service Adjustments with Replacing Memory IC(IC801)

| No. | Item | Range | Data | Description |
|---|---|---|---|---|
| 93 | COLOR SYSTEM | 0 ~ F | 0 | Color system selector |
| 94 | 443NT50 INHIBIT | 0 ~ 1 | 1 | Auto color system 443NTSC(50Hz) |
| 95 | FSC FREE | 0 ~ 1 | 0 | VCXO free-running mode switch ON/OFF |
| 96 | FORCE MONO | 0 ~ 1 | 0 | Monochrome mode switch |
| 97 | FORCE COLOR | 0 ~ 1 | 0 | Killer function ON/OFF switch only for manual color mode |
| 98 | COND KILLER EN | 0 ~ 1 | 0 | Condition Killer Sensitivity Enable |
| 99 | 1/2FSC TRAP OFF | 0 ~ 1 | 0 | Half fsc Trap filer off |
| 100 | C BPF OFF | 0 ~ 1 | 0 | Chroma DDS OFF |
| 101 | CTI | 0 ~ 1 | 1 | Color Edge Timing Improvement |
| 102 | DDS OFF | 0 ~ 1 | 0 | Chroma Bandpass Filter OFF |
| 103 | ACC AMP ON | 0 ~ 1 | 0 | Chroma ACC AMP FUNCTION |
| 104 | C ANGLE 95 | 0 ~ 1 | 0 | Chroma Demodulation Angle switch |
| 105 | RF DELAY ADJ | 0 ~ 7F | 2A | RF AGC delay point adjustment |
| 106 | VIF SYNC ADJ | 0 ~ 1 | 01 | Enable VIF video out lamp |
| 107 | AFT DEFETAT | 0 ~ 1 | 0 | AFT OUT ON/OFF switch |
| 108 | VIF REEQ | 0 ~ F | 0 | VIF frequency selector |
| 109 | VIF VIDEO OUT GAIN | 0 ~ 7 | 7 | VIF Video Detector output amplitude adjustment |
| 110 | VIF DEFEAT | 0 ~ 1 | 0 | VIF AGC gain |
| 111 | AFT REV | 0 ~ 1 | 0 | AFT polarity reverse |
| 112 | VIF POS | 0 ~ 1 | 0 | positive modulation mode |
| 113 | STRAP OFF | 0 ~ 1 | 0 | SOUND trap test mode switch |
| 114 | OM DET | 0 ~ 1 | 0 | Vertical frequency standard / non-standard detection |
| 115 | VIF AGC CLIP | 0 ~ 1 | 0 | VIF AGC sensitivity become low |
| 116 | AMF ON | 0 ~ 1 | 0 | VIF AGC CURRENT CHANGE ON/OFF switch |
| 117 | AMF VTH | 0 ~ 7 | 0 | VIF AGC CURRENT CHANGE FUNCTION INPUT LEVEL Adj. |
| 118 | VIF AGC VTH HYS OFF | 0 ~ 1 | 0 | VIF AGC CURRENT CHANGE FUNCTION HYSTERESIS OFF SWITCH |
| 119 | VIF AGC SPEED UP | 0 ~ 7 | 0 | VIF AGC SPEED Adj. |
| 120 | AUDIO ATT L MONO | 0 ~ 7F | 7F | L Ch Audio output level attenuation |
| 121 | SIF OUT MUTE | 0 ~ 1 | 01 | AF direct put out ON/OFF (Mute) switch |
| 122 | AUDIO ATT (R) | 0 ~ 7F | 7F | R Ch Audio output level attenuation |
| 123 | SIF OVER MODE | 0 ~ 1 | 0 | SIF OVER modulation detector ON/OFF switch |
| 124 | AUDIO SW SEL | 0 ~ 1F | 0 | Audio Switch Selector |
| 125 | SECAML PC65 | 0 ~ 1 | 0 | SECAML' Phase Comparator Mode Select |
| 126 | CONV VCO PULL UP | 0 ~ 1 | 0 | SIF CONVERTER VCO PULL UP |
| 127 | CONV VCO BETA UP | 0 ~ 1 | 0 | SIF CONVERTER VCO Bup |
| 128 | SIF MODE | 0 ~ 7 | 1 | SIF Frequency selector |
| 129 | AVL SEL | 0 ~ 1 | 0 | AVL MODE DELECTOR ON/OFF |
| 130 | SIF INT | 0 ~ 1 | 1 | |
| 131 | SIF BPF WIDE | 0 ~ 3 | 3 | SIF BPF band width selector ( For over mode ) |
| 132 | SIF PAL | 0 ~ 3 | 0 | Switch to improve Sound S/N at PAL signal ON/OFF |
| 133 | SIF PAL INV | 0 ~ 1 | 0 | Switch to improve Sound S/N at PAL signal ON/OFF |
| 134 | SIF BPF TEST | 0 ~ 1 | 0 | Color Saturation control (Offset Data of Color) for PAL |
| 135 | HI TRAP OFF | 0 ~ 1 | 0 | Color Saturation control (Offset Data of Color) for NTSC |
| 136 | VIDEO SW LPF | 0 ~ 1 | 0 | Color Saturation control (Offset Data of Color) for SECAM |
| 137 | VIDEO MUTE | 0 ~ 1 | 0 | Luminance signal mute ON/OFF |
| 138 | SHARPNESS PRE | 0 ~ 1F | 16 | SHARPNESS PRESHOOT LEVEL Adjustment |

# Service Adjustments with Replacing Memory IC(IC801)

| No. | Item | Range | Data | Description |
|---|---|---|---|---|
| 139 | SHARPNESS OVER | 0 ~ 1F | 0A | SHARPNESS OVERSHOOT LEVEL Adjustment |
| 140 | BLK STRETCH OFF | 0 ~ 1 | 0 | Black Stretch function ON/OFF switch |
| 141 | BLK STRETCH CHARGE | 0 ~ 3 | 1 | Charge time constant adjustment for black stretch |
| 142 | BLK STRETCH | 0 ~ 3 | 1 | Discharge time constant adjustment for black stretch |
| 143 | BLK STRTCH GAIN | 0 ~ 1 | 0 | Black stretch gain adjustment |
| 144 | GAMMA CONTROL | 0 ~ 3 | 3 | Luminance gamma threshold control ON/OFF |
| 145 | C TRAP ADJ PAL | 0 ~ 3 | 1 | Chroma trap for for adjustment PAL |
| 146 | C TRAP ADJ NTSC | 0 ~ 3 | 1 | Chroma trap for for adjustment NTSC |
| 147 | C TRAP OFF | 0 ~ 1 | 0 | Chroma trap ON/OFF switch |
| 148 | DOUBLE TRAP | 0 ~ 1 | 1 | Chroma trap filter for SECAM ON/OFF |
| 149 | Y NR TH | 0 ~ 3 | 0 | Video Noise Reduction Threshold level change |
| 150 | Y NR DEPTH | 0 ~ 3 | 0 | Video Noise Reduction Threshold Depth change |
| 151 | Y NR ON | 0 ~ 1 | 1 | Video Noise Reduction ON |
| 152 | Y DL TIME ADJ | 0 ~ 7 | 2 | Luminance signal delay time adjustment for PAL |
| 153 | Y DL TIME ADJ SECAM | 0 ~ 7 | 4 | Luminance signal delay time adjustment for SECAM |
| 154 | SECAM KILLER | 0 ~ 3 | 1 | SECAM color killer sensitivity threshold adjustment |
| 155 | SECAM PLL RST OFF | 0 ~ 1 | 0 | SECAM PLL RESET disable |
| 156 | SECAM OFF | 0 ~ 1 | 0 | SECAM demodulator switch |
| 157 | BASEBAND TINT | 0 ~ 3F | 3F | Base band Tint control for component color signal (DVD) |
| 158 | CR DL FINE | 0 ~ 1 | 0 | Cr signal delay time adjustment |
| 159 | CBCR GAIN UP | 0 ~ 1 | 0 | CbCr signal pedestal Gain Switch |
| 160 | CBCRPED ADJ ON | 0 ~ 1 | 1 | CbCrPED ADJ ON |
| 161 | CRPEDESTAL ADJ | 0 ~ F | 3 | Cr signal Pedestal level adjustment |
| 162 | CBPEDESTAL ADJ | 0 ~ F | 4 | Cb signal Pedestal level adjustment |
| 163 | CB DL FINE | 0 ~ 3 | 0 | Cb signal delay time adjustment |
| 164 | DL TEST | 0 ~ 1 | 0 | 1HD TEST MODE |
| 165 | R MATRIX PAL | 0 ~ 3 | 1 | VIF AGC SPEED Adj. |
| 166 | R MATRIX NT DEFFER | -1 ~ 2 | 1 | R matrix gain control for YCbCr (NTSC Offset) |
| 167 | WHITE BALANCE | | | WHITE BALANCE (R-Drive & B-Drive) |
| 168 | CUT OFF ( R ) | 0 ~ FF | 00 | R OUT Pedestal level adjustment ( R Bias for White balance ) |
| 169 | CUT OFF ( G ) | 0 ~ FF | 00 | G OUT Pedestal level adjustment ( G Bias for White balance ) |
| 170 | CUT OFF ( B ) | 0 ~ FF | 00 | B OUT Pedestal level adjustment ( B Bias for White balance ) |
| 171 | CUT OFF | | | One Line |
| 172 | FAST SW | 0 ~ 1 | 1 | |
| 173 | OPT STE MONO | 0 ~ 1 | 1 | Option Stereo / Mono (0=Mono; 1=Stereo) |
| 174 | OPT VOL TABLE | 0 ~ 1 | 1 | Option Volume Table |
| 175 | OPT MPP | 0 ~ 1 | 1 | Option MPP (0=with MPP; 1=without MPP) |
| 176 | OPT BOOSTER | 0 ~ 1 | 1 | Option Booster (0=with Booster; 1=without Booster) |
| 177 | OPT AV SEL | 0 ~ 3 | 2 | Option Audio Video Select |
| 178 | OPT COL SYSTEM | 0 ~ 2 | 1 | Option Color System |
| 179 | OPT SIF SYSTEM | 0 ~ 2 | 1 | Option SIF System |
| 180 | OPT LG ALPS TCL | 0 ~ 2 | 0 | Option Maker Tunner LG , ALPS , TCL |
| 181 | OPT PLUG & PLAY | 0 ~ 1 | 0 | Option Plug and Play |
| 182 | OPT ASIA ME HSE | 0 ~ 2 | 0 | Option ASIA Middle East HSE |
| 183 | POWER ON TIME | 0 ~ FF | 0 | Power ON Timer |
| 184 | OSD H - POSITION | 0 ~ FF | 3F | OSD Horizontal Position |

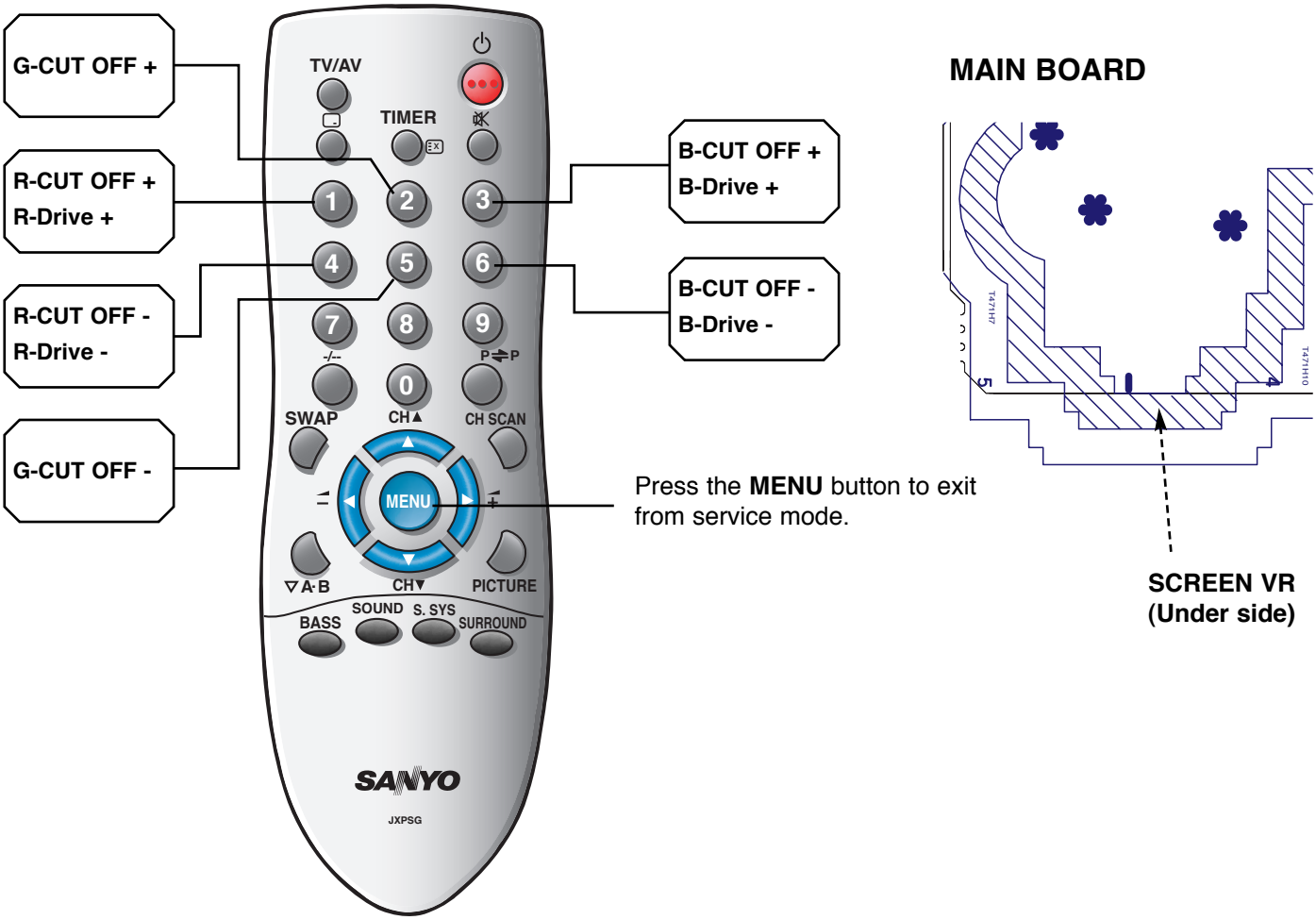
| No. | Item | Range | Data | Description |
|---|---|---|---|---|
| 185 | OSD V - ( 60 Hz ) | 0 ~ FF | 15 | OSD Vertical NTSc |
| 186 | VOLUME OFFSET | 0 ~ 7 | 0 | Volume Offset |
| 187 | BASS OFFSET | 0 ~ 7 | 0 | BASS OFFSET |
| 188 | TREBLE OFFSET | 0 ~ 7 | 0 | TREBLE OFFSET |
| 189 | OPT AFT | 0 ~ 1 | 1 | 0 : For VCO AFT Voltage 2.5 V (WS 1.2) ==> 1 : for (WS 2.0) |
| 190 | OPT CHMUTE | 0 ~ 1 | 1 | VIDEO MUTE WHEN changing posion 0: NO MUTE 1: MUTE |
| 191 | AV TV TIME | 0 ~ FF | 17 | AV -TV change time(mainloop number) |
| 192 | BG - STRAP OFFSET | -9 ~ 9 | -01 | S-TRAP OFFSET for sound strap adjustment BG System |
| 193 | DK - STRAP OFFSET | -9 ~ 9 | -05 | S-TRAP OFFSET for sound strap adjustment DK System |
| 194 | I - STRAP OFFSET | -9 ~ 9 | 2 | S-TRAP OFFSET for sound strap adjustment I System |
| 195 | M - STRAP OFFSET | -9 ~ 9 | 1 | S-TRAP OFFSET for sound strap adjustment M System |
| 196 | BGSUB STRAP OFFSET | -9 ~ 9 | -4 | S-TRAP OFFSET for sound strap adjustment Bilingual System |
| 197 | OPT PAL DK I | 0 ~ 1 | 0 | Option SIF System PAL DK I |
| 198 | OPT BASS WOOFER | 0 ~ 1 | 0 | Option Bass Woofer |
| 199 | SECAM CNT | 0 ~ FF | 5 | |
| 200 | KEY WORD | 0 ~ AC | AC | Key Word |

# Service Mode Adjustments

## Items 167 - 171 GREY SCALE

(1) Receive a monochrome circular pattern.
(2) Set the brightness and colour to normal, contrast to maximum.
(3) Enter to the service mode.
(4) Select No. 168 CUT OFF (R), No, 169 CUT OFF (G), and No. 170 CUT OFF (B) and set each data to 0 by pressing the VOLUME + or - key.
(5) Select No. 167 WHITE BALANCE (R-Drive and B-Drive) and set data to 3F by pressing the VOLUME + or - key.
(6) Turn Screen Control on the FBT (T471) to minimum (fully counter-clock-wise).
(7) Select No. 171 (1-line appear).
(8) Advance Screen Control clockwise to obtain just visible one colour line. If line does not appear, place this control to maximum (fully clockwise).
(9) Raise each CUT OFF Level with 1, 2, 3, 4, 5 and 6 keys to obtain just visible white line.
(10) Select No. 167 WHITE BALANCE (Drive Adjustments).
(11) Adjust Red and Blue Drive Levels alternately with 1, 3, 4 or 6 key to produce normal black and white picture in highlight areas.
(12) Check for proper grayscale at all brightness levels. To turn off the TV Service Menu display, press the MENU key.

***Note:*** If the Grayscale adjustment is made after picture tube replacement, check the High Voltage



# Service Mode Adjustments

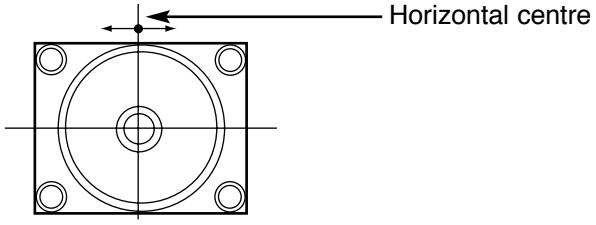
Following adjustments should be carried out when the memory IC is replaced. How to enter the service mode and adjust values, please refer to " Entering to Service mode" on page 8.

## Item 105 [RF DELAY ADJ] AGC ADJ

NOTE: Do not attempt this adjustment with weak signal.
(1) Tune the receiver to most clearest (or strongest) VHF station in your area. Set the brightness and contrast controls to maximum. Set the colour control to minimum.
(2) Select [RF DELAY ADJ] in the service mode.
(3) Change value until the snow noise just disappears.
(4) Exit from service mode.

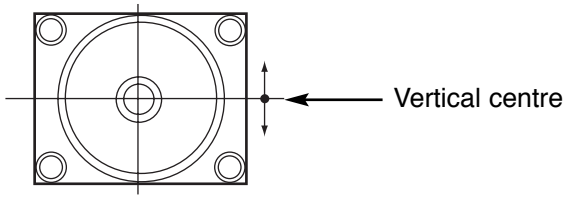
## Item 18 [AFC2 H-PHASE 50] HORIZONTAL ADJ

(1) Receive a monochrome circular pattern.
(2) Set the brightness and contrast to normal.
(3) Select [AFC2 H-PHASE 50] in the service mode.
(4) Change value to be optimum horizontal centre position.
(5) Exit from service mode.



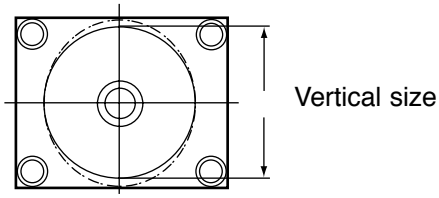

## Item 16 [V-SHIFT 50] VERTICAL CENTRE

(1) Receive a monochrome circular pattern.
(2) Set the brightness and contrast to normal.
(3) Select [V-SHIFT 50] in the service mode.
(4) Change value to be optimum verticall centre position.
(5) Exit from service mode.



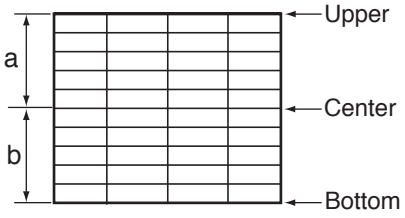

## Item 6 [V-SIZE 50] VERTICAL SIZE

(1) Receive a monochrome circular pattern..
(2) Set the brightness and contrast to maximum.
(3) Select [V-SIZE 50] in the service mode.
(4) Change value to be optimum vertical size.
(5) Exit from service mode.



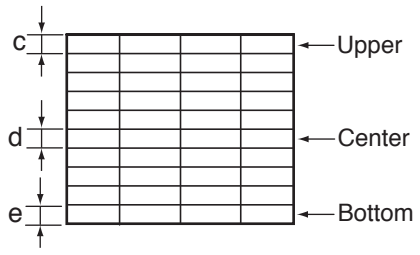

## Item 14 [V-LINEARITY 50] VERTICAL LINEARITY

(1) Receive a crosshatch pattern.
(2) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
(3) Select [V-LINEARITY 50] in the service mode.
(4) Adjust Vertical Linearity so that the difference of "a" and "b" becomes less than 3mm by pressing VOLUME + or - button.
(5) Exit from service mode.




## Item 12 [V S CORRECT 50] V-S CORRECTION

(1) Receive a crosshatch pattern.
(2) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
(3) Select [V S CORRECT 50] in the service mode.
(4) Adjust Vertical S-letter Correction so that the difference of "c", "d" and "e" becomes less than 2 mm by pressing the VOLUME + or - button.
(5) Confirm Vertical Linearity and adjust Vertical Center then Vertical Size.
(6) Exit from service mode.



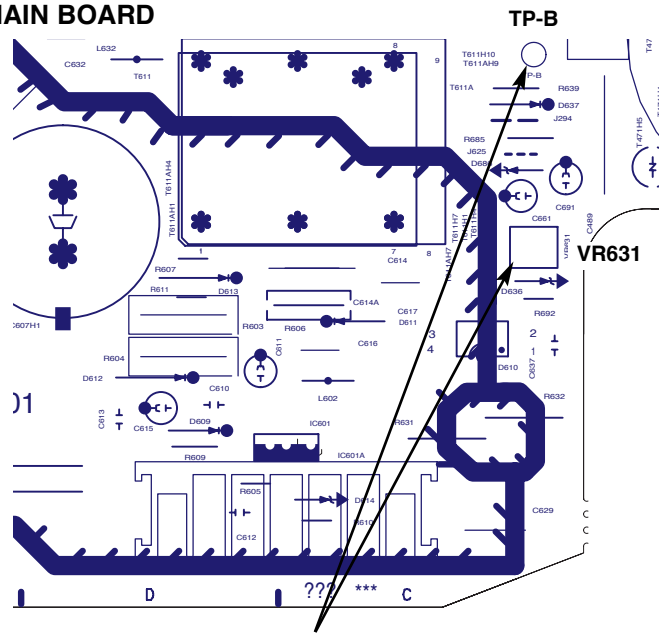
# Service Adjustments

Following adjustments are not required to readjust when replacing the memory IC.

## B-VOLTAGE SUPPLY CHECKING

(1) Connect DC meter to TP-B and the ground.
(2) Tune the receiver to an active channel and synchronized picture. Select NATURAL picture mode by pressing the **PICTURE MODE** button on the remote control.
(3) Adjust B-voltage to be 130 ± 0.5V DC by using VR631.

**MAIN BOARD**

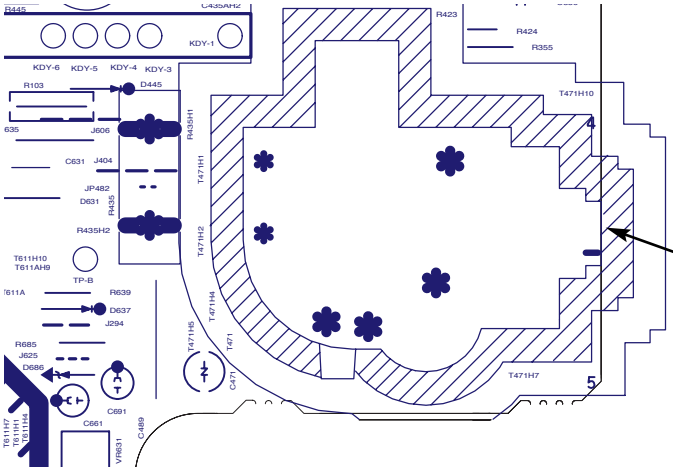



**B-Voltage Supply Adjustment**

## FOCUS ADJUSTMENT

(1) Receive the monochrome circular pattern.
(2) Set the brightness to normal and contrast to maximum.
(3) Adjust the focus control on the F.B.T. for the best focus on the screen centre.

**MAIN BOARD**




## HIGH VOLTAGE CHECK

***Note:*** *+B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.*

(1) Connect high voltage voltmeter negative lead to ground, and connect + lead to anode of picture tube.
(2) Tune receiver to an active channel and confirm TV is operating properly.
(3) Maximize the beam current by adjusting the contrast and brightness controls to maximum. Confirm high voltage is within 24.0 KV and 26.0 KV at maximum beam current.
(4) Eliminate the beam current by adjusting the contrast and brightness controls to minimum. Confirm high voltage does not exceed 27.5 KV at zero beam current.

If reading is not within range, check horizontal circuit.

No high-voltage adjustment is provided on this chassis.

# Special Function

**The following special functions can be set up on this TV set.**

### (1) Volume Lock setting

With this function, a maximum sound volume limit can be set at any level.

### (2) Tuning Lock setting

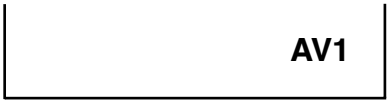
Once TUNING LOCK is switched on, further channel tuning (Pre-set) is not possible. The Channel Swapping function also is not possible.

### (3) Music Mode setting

When Music Mode is ON, Programme position from “247” to “255” and “0” are set Music Mode. Only sound is provided and any picture is not on the screen under Music Mode.

### (4) AV Start setting

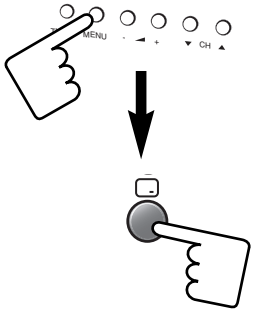
Set AV-START to ON and every time the TV set is switched on, AV1 position will be the initial programme position.

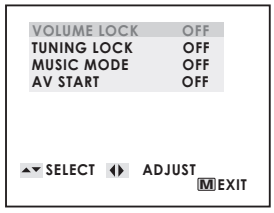



## How to set the special function:

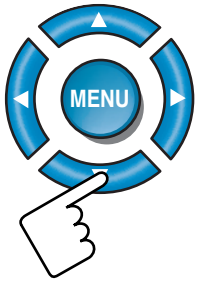
**Note:** When making the VOLUME LOCK setting, set the desired maximum sound volume by pressing the **VOLUME +** or **–** button before entering Special Function setting mode.

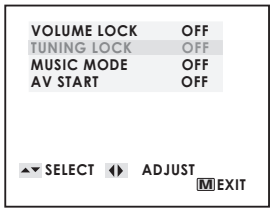
**1** To enter into the special function setting mode, press and hold the **MENU** button of the TV set, then press the **Recall** button on the Remote Control.



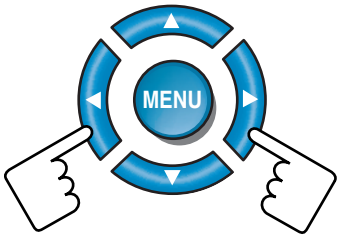



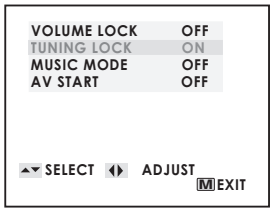

**2** Select an item of the special functions by pressing the **PROGRAMME UP** or **DOWN** button on the remote control or the TV set.



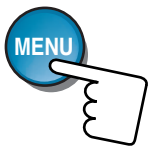




**3** Set the selected special function “ ON “ by pressing the **VOLUME + or –** button. To cancel, set to “ OFF”.




**4** Press the **MENU** button of the remote control to return to the normal TV mode.



# Purity and Convergence Adjustment

CAUTION: The Convergence and Purity adjustments have been made at the factory. Readjustment should be made only after picture tube or deflection yoke replacement, following the steps below:

PURITY ADJUSTMENT

1. Demagnetize the picture tube and receiver using an external degaussing coil. When replacing picture tube or deflection yoke, mount deflection yoke and purity-convergence magnets assembly properly, see figures 1 and 4.
2. Turn Red and Blue guns off and provide only Green raster. Rotate Screen control to fully counterclockwise. Rotate Red and Blue Bias controls fully counterclockwise. Slowly rotate Green Bias control clockwise to produce Green raster.
3. Loosen the screw holding the Deflection Yoke and remove the 3 Rubber Wedges, and slide the Deflection Yoke fully forward.
4. Rotate and spread the Tabs of the two Purity Magnets to centre the vertical green belt in the picture screen. The Purity Magnets are also adjusted to obtain vertical centring of the raster.
5. Slowly slide the Deflection Yoke backward until a uniform green screen is obtained.
6. Check the purity of the red and blue screens for uniformity, turn off other colours to check this (use bias controls). Readjust the yoke position if necessary until all screens are pure.
7. Adjust each Bias control and screen control to obtain white raster. Refer to Gray Scale Adjustment. If part of the picture screen is coloured, adjust the Deflection Yoke position forward or backward slightly.
8. Tighten the mounting screw of the Deflection Yoke. Adjust Convergence next.

CENTRE CONVERGENCE ADJUSTMENT

1. Use a dot crosshatch pattern signal.
2. Turn Red and Blue guns on and turn off Green gun. Adjust the angle between the Tabs of the Four Pole Magnet 1 and 2, and superimpose the Red and Blue vertical lines in the centre area of the picture screen. Refer to figure 2.
3. Keeping the mutual angle of the Tabs of the Four Pole Magnet turn them together to superimpose the Blue and Red horizontal lines in the centre area of the picture screen. Refer to figure 2.
4. Turn Green gun on and adjust Six Pole Magnet 3 and 4 that the Green line superimposed on the Red/Blue lines.
   This is the same procedure used in steps 2 and 3.
   Refer to figure 3.

OUTER AREA CONVERGENCE ADJUSTMENT

Slightly loosen the screw holding the Deflection Yoke. Adjust the Deflection Yoke to converge the detail in the outer area (left side and right side) of the picture screen by orbital movement of the front of the Yoke, then secure the Deflection Yoke in appropriate position by putting the wedges as illustrated. Tighten screw holding the Deflection Yoke.

**Note: The form of deflection yoke changes with models.**

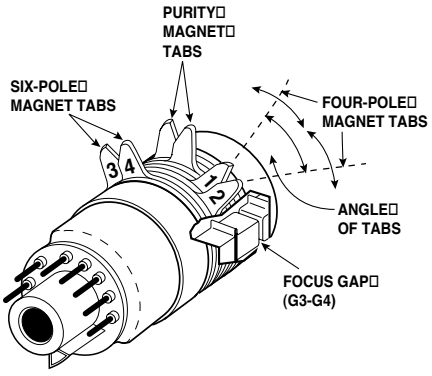



**Figure 1. Purity and Convergence Magnets**

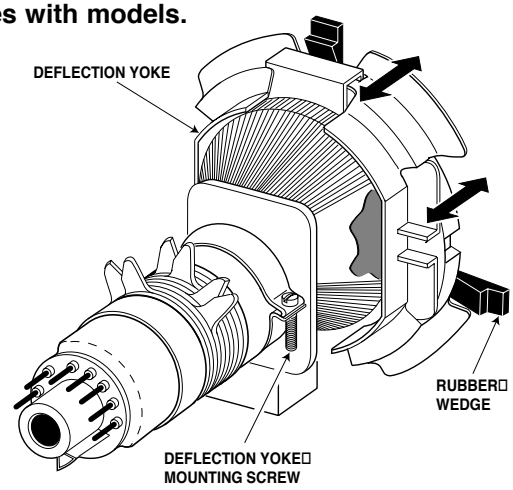



**Figure 4. Deflection Yoke Movement**

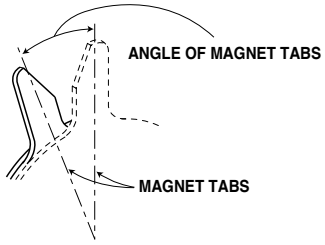



**Figure 5. Adjusting Magnet**

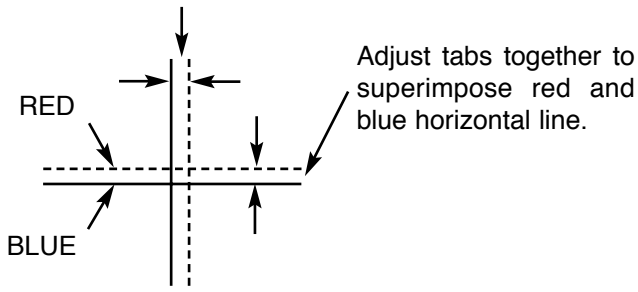



Figure- 2 BLUE AND RED LINE MOVEMENT

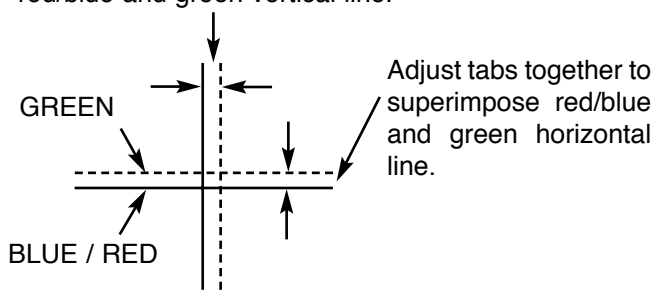



Figure- 3 BLUE/RED AND GREEN MOVEMENT

# Mechanical Disassembly

## CABINET BACK REMOVAL

1. Refer to Figure 1, remove 10 screws.
2. Pull off cabinet back and remove.

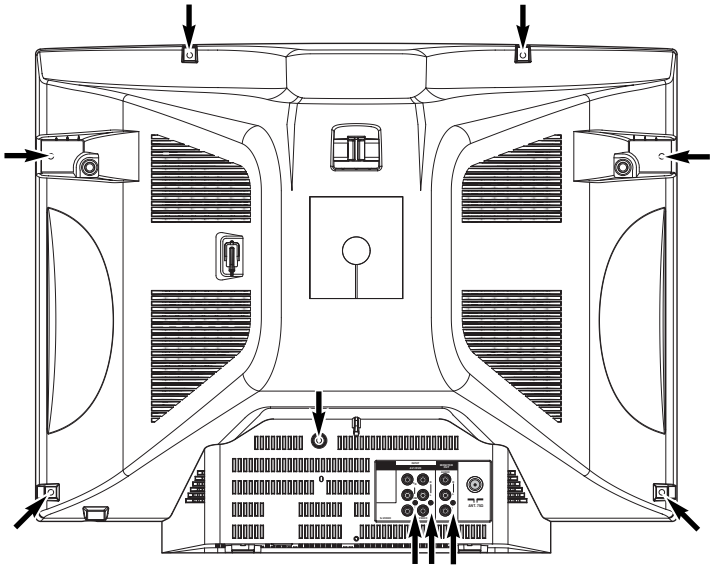


**Figure 1. Cabinet Back Removal**

# Protection Circuit

This TV set has a built-in power supply protection circuit.
It is provided to protect the TV set in case of a power supply circuit malfunctions. When something abnormality occurs during TV reception, the TV set goes to the stand-by mode.

When an abnormality occurs during TV reception, it causes pin 72 of the Processor to go continually Low (less than 2.0V) for about 2 second. The Processor detects that this has occurred and outputs the signal from pin 74 to switch off the power supply lines.

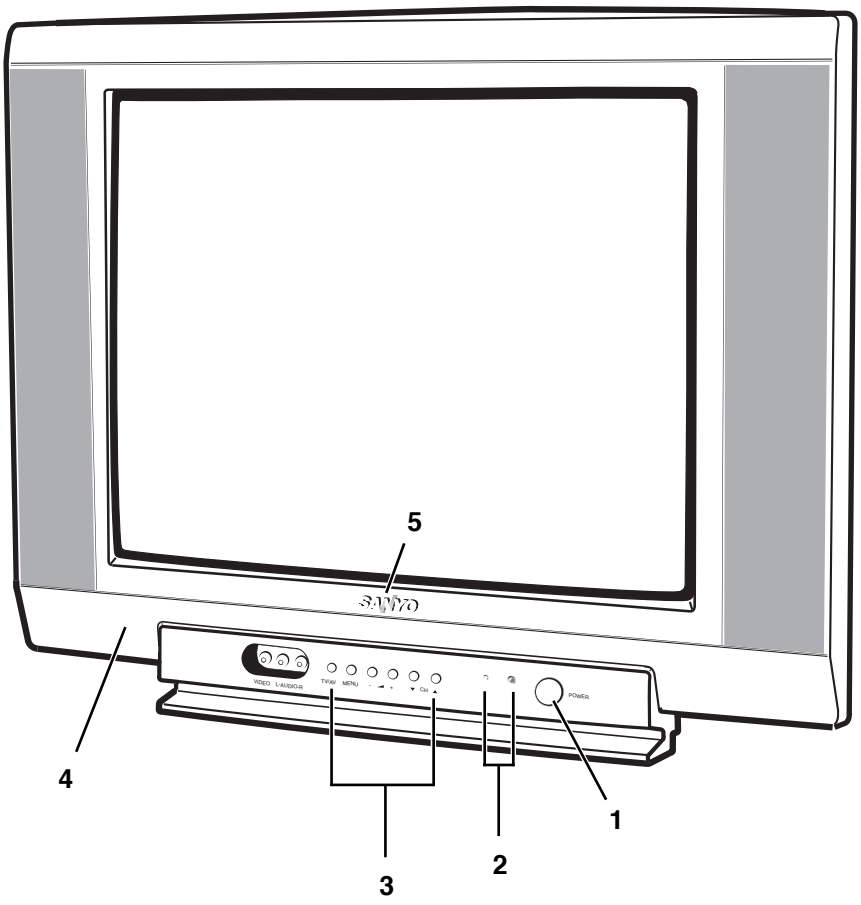
### ■ Releasing the protective circuit and restoring power supply

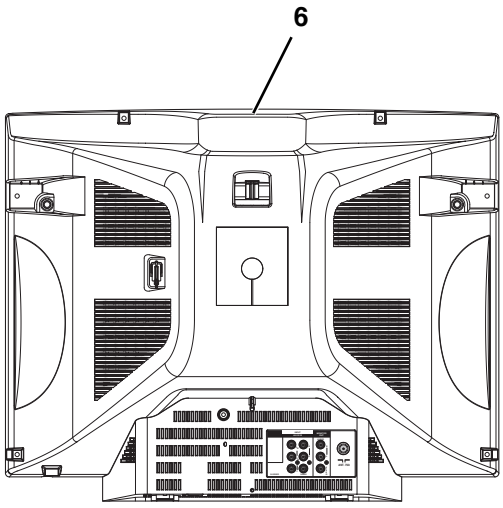
To release the protective circuit and restore power supply, turn the power to the TV set OFF and then ON again via either the main power switch or the ON-OFF button on the remote control. This will work only if the power supply trouble was temporary. If there is permanent trouble such as a damaged circuit, power cannot be restored and the circuit will have to be repaired.

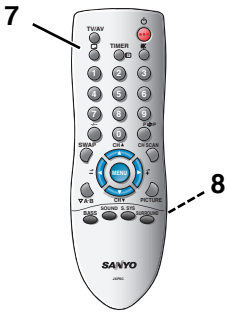
# Cabinet Parts List



Note: Parts order must contain Service Ref. No., Part No., and descriptions.




| Key No. | Part No. | Description | Key No. | Part No. | Description |
|---|---|---|---|---|---|
| 1 | 610 331 7175 | BUTTON POWER-BB2A | | | |
| | 610 229 8406 | SPRING-E3HA (for power button) | | | |
| 2 | 610 331 7274 | DEC IND-BB2A | | | |
| 3 | 610 331 7380 | BUTTON UNITED-BB2A | | | |
| 4 | 610 335 2978 | CABINET FRONT-BD6A | | | |
| 5 | 645 069 2185 | BADGE,SANYO*43.5X10L43.5 | | | |
| 6 | 610 335 3012 | CABINET BACK-BD6A | | | |
| 7 | 645 071 1145 | ASSY,REMOCON JXPSC | | | |
| or | 652 002 0634 | REMOCON,JXPSG | | | |
| 8 | 610 313 3393 | RC-BATTERY LID-JXPLA | | | |
| | 610 336 7637 | INSTRUCTION MANUAL-C8WE-A | | | |
| | 610 338 0674 | CORRECTION NOTICE-C8WM | | | |

# Chassis Electrical Parts List

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a ⚠ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Parts order must contain Service Ref. No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

| Ref. No. | Part No. | Description |
|---|---|---|

**NOTES:**

Read description in the Capacitor and Resistor as follows:

CAPACITOR

CERAMIC 100P K 50V

- 50V — Rated Voltage
- K — Tolerance Symbols:

Less than 10pF

| | | |
|---|---|---|
| A : Not specified | B : ±0.1pF | C : ±0.25pF |
| D : ±0.5pF | F : ±1PF | G : ±2pF |
| R : ±0.25-0pF | S : ±0-0.25pF | E : +0-1pF |

More than 10pF

| | | |
|---|---|---|
| A : Not specified | B : ±0.1% | C : ±0.25% |
| D : ±0.5% | F : ±1% | G : ±2% |
| H : ±3% | J : ±5% | K : ±10% |
| L : ±15% | M : ±20% | N : ±30% |
| P : +100-0% | Q : +30-10% | T : +50-10% |
| U : +75-10% | V : +20-10% | W : +100-10% |
| X : +40-20% | Y : +150-10% | Z : +80-20% |

- 100P — Rated value: P=pico farad, U=micro farad
- CERAMIC — Material:

| | |
|---|---|
| CERAMIC | Ceramic |
| MT-PAPER | Metallized Paper |
| POLYESTER | Polyester |
| MT-POLYEST | Metallized Polyester |
| POLYPRO | Polypropylene |
| MT-POLYPRO | Metallized Polypropylene |
| COMPO FILM | Composite film |
| MT-COMPO | Metallized Composite |
| STYRENE | Styrene |
| TA-SOLID | Tantalum Solid |
| AL-SOLID | Aluminium Solid |
| ELECT | Electrolytic |
| NP-ELECT | Non-polarised Electrolytic |
| OS-SOLID | Aluminium Solid with Organic Semiconductive Electrolytic |
| DL-ELECT | Double Layered Electrolytic |

RESISTOR

CARBON 4.7K J A 1/4W

- 1/4W — Rated Wattage
- A — Performance Symbols:
  A: General B: Non flammable Z: Low noise
  Other: Temperature coefficient
- J — Tolerance Symbols:
  A: ±0.05% B: ±0.1% C: ±0.25% D: ±0.5%
  F: ±1% G: ±2% J: ±5% K: ±10%
  M: ±20% P: +5-15%
- 4.7K — Rated value, ohms:
  K: 1,000, M: 1,000,000
- CARBON — Material:

| | |
|---|---|
| CARBON | Carbon |
| MT-FILM | Metal Film |
| OXIDE-MT | Oxide Metal Film |
| SOLID | Composition |
| MT-GLAZE | Metal Glaze |
| WIRE WOUND | Wire Wound |
| CERAMIC RES. | Ceramic |
| FUSIBLE RES. | Fusible |

| Ref. No. | Part No. | Description |
|---|---|---|

## OUT OF CIRCUIT BOARD

**PICTURE TUBE**

| | | |
|---|---|---|
| ⚠Q901 | 4140147809 | CRT ASSY A51QDX993X005(A) |
| Q901-2A | 6101170154 | DY SPACER-D4AK |
| | 6102337891 | DY SPACER E2HA |
| | 6102904154 | DY SPACER-F8LZ |
| Q901-2B | 6101170154 | DY SPACER-D4AK |
| | 6102337891 | DY SPACER E2HA |
| | 6102904154 | DY SPACER-F8LZ |
| Q901-2C | 6101170154 | DY SPACER-D4AK |
| | 6102337891 | DY SPACER E2HA |
| | 6102904154 | DY SPACER-F8LZ |

**COIL**

| | | |
|---|---|---|
| ⚠L901 | 6450837616 | ASSY,COIL,DEGAUSSING |

**MISCELLANEOUS**

| | | |
|---|---|---|
| SP901 | 6520014831 | SPEAKER,8 |
| | 6520018174 | SPEAKER,8 |
| SP902 | 6520014831 | SPEAKER,8 |
| | 6520018174 | SPEAKER,8 |
| ⚠W901 | 6450930201 | CORD,POWER-2.0MK-A5003 |
| W902 | 6102837179 | ASSY,WIRE GND CONNECTOR C |

## 6103366470 ASSY,PWB,MAIN BD6R 1AA0B10S251KA

**TRANSISTOR**

| | | |
|---|---|---|
| Q1001 | 4052203115 | TR ISA1235AC1E |
| | 4052203016 | TR ISA1235AC1F |
| | 4051648016 | TR KTA1504S-GR-RTK |
| | 4051345925 | TR 2SA1037AK-T146-R |
| | 4051472215 | TR 2SA1037AK-S-T146 |
| | 4051739615 | TR 2SA1235A1E |
| | 4051739714 | TR 2SA1235A1F |
| Q1002 | 4052203115 | TR ISA1235AC1E |
| | 4052203016 | TR ISA1235AC1F |
| | 4051648016 | TR KTA1504S-GR-RTK |
| | 4051345925 | TR 2SA1037AK-T146-R |
| | 4051472215 | TR 2SA1037AK-S-T146 |
| | 4051739615 | TR 2SA1235A1E |
| | 4051739714 | TR 2SA1235A1F |
| Q1003 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q111 | 4052187712 | TR KTC3879S-Y |
| | 4050159721 | TR 2SC2814-F4-TB |
| Q122 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |

| Ref. No. | Part No. | Description |
|---|---|---|
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q1901 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q201 | 4050235009 | TR 2SD400-E-MP |
| Q202 | 4050235009 | TR 2SD400-E-MP |
| Q203 | 4050235009 | TR 2SD400-E-MP |
| Q206 | 4050235009 | TR 2SD400-E-MP |
| Q431 | 4050180517 | TR 2SC3332-R |
| | 4050180606 | TR 2SC3332-S |
| Q432 | 4060171908 | TR TT2140LS-YB11 |
| Q471 | 4050036002 | TR 2SA1319-S |
| Q472 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q511 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q631 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q632 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q683 | 4052197711 | TR KTB985-B-AT/P |
| | 4050890000 | TR 2SA1707-S |
| | 4050890109 | TR 2SA1707-T |
| | 4050096907 | TR 2SB985-S |
| Q684 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| Q801 | 4050235009 | TR 2SD400-E-MP |
| Q802 | 4052203115 | TR ISA1235AC1E |
| | 4052203016 | TR ISA1235AC1F |
| | 4051648016 | TR KTA1504S-GR-RTK |
| | 4051345925 | TR 2SA1037AK-T146-R |
| | 4051472215 | TR 2SA1037AK-S-T146 |
| | 4051739615 | TR 2SA1235A1E |
| | 4051739714 | TR 2SA1235A1F |
| Q886 | 4051648412 | TR KTC3875S-GR-RTK |
| | 4050144519 | TR 2SC2412K T146 R |
| | 4050144618 | TR 2SC2412K T146 S |
| | 4050158724 | TR 2SC2812-L6-TB |
| | 4050158922 | TR 2SC2812-L7-TB |
| | 4051631612 | TR 2SC2812N-L6-TB0 |
| | 4051739813 | TR 2SC3928A1R |
| | 4051739912 | TR 2SC3928A1S |
| **INTEGRATED CIRCUIT** | | |
| IC001 | 4096827701 | IC LA42205-E |
| IC201 | 4106363304 | IC R2J12203M4-XXXFP |
| IC501 | 4096646104 | IC LA78040B-E |
| IC601 | 4106062108 | IC STR-W6753(LF2003 |
| IC802 | 4096760701 | IC LE24C161-E-C |
| | 4104958007 | IC AT24C16A-10PU-2.7 |
| | 4106374607 | IC LE24C162-E |
| | 4094594506 | IC 24LC16B/P |
| **CAPACITOR** | | |
| C001 | 4041064106 | ELECT 1000U M 25V |
| | 4031904702 | ELECT 1000U M 25V |
| C002 | 4041080403 | ELECT 100U M 16V |
| | 4041081509 | ELECT 100U M 25V |
| | 4032112918 | ELECT 100U M 16V |
| | 4031905214 | ELECT 100U M 25V |
| C003 | 4041046409 | CERAMIC 3900U K 50V |
| | 4040914204 | CERAMIC 3900P K 50V |
| | 4031577213 | CERAMIC 3900P K 50V |
| C004 | 4041140206 | CERAMIC 1U Z 16V |
| | 4032070317 | CERAMIC 1U Z 16V |
| | 4032789615 | CERAMIC 1U Z 16V |
| C005 | 4041140206 | CERAMIC 1U Z 16V |
| | 4032070317 | CERAMIC 1U Z 16V |
| | 4032789615 | CERAMIC 1U Z 16V |
| C006 | 4041046409 | CERAMIC 3900U K 50V |
| | 4040914204 | CERAMIC 3900P K 50V |
| | 4031577213 | CERAMIC 3900P K 50V |
| C011 | 4041081202 | ELECT 10U M 16V |
| | 4041151707 | ELECT 10U M 50V |
| | 4032113519 | ELECT 10U M 50V |
| C1001 | 4040970101 | ELECT 1U M 50V |
| | 4040843801 | ELECT 1U M 50V |
| C1004 | 4040970200 | ELECT 10U M 50V |
| | 4040843900 | ELECT 10U M 50V |
| C1005 | 4040970200 | ELECT 10U M 50V |
| | 4040843900 | ELECT 10U M 50V |
| C1006 | 4040988403 | ELECT 470U M 10V |
| | 4040842606 | ELECT 470U M 10V |
| C1009 | 4040970101 | ELECT 1U M 50V |
| | 4040843801 | ELECT 1U M 50V |
| C101 | 4040987802 | ELECT 470U M 6.3V |
| | 4040842408 | ELECT 470U M 6.3V |
| C1010 | 4041044900 | CERAMIC 0.1U K 50V |
| | 4040912606 | CERAMIC 0.1U K 50V |
| | 4033670417 | CERAMIC 0.1U K 50V |
| C1011 | 4041044900 | CERAMIC 0.1U K 50V |
| | 4040912606 | CERAMIC 0.1U K 50V |
| | 4033670417 | CERAMIC 0.1U K 50V |
| C1012 | 4040970101 | ELECT 1U M 50V |

| Ref. No. | Part No. | Description | | | Ref. No. | Part No. | Description | | |
|---|---|---|---|---|---|---|---|---|---|
| | 4040843801 | ELECT | 1U | M 50V | | 4033456615 | CERAMIC | 1U | M 10V |
| C104 | 4040973607 | ELECT | 47U | M 50V | C1224 | 4033588316 | CERAMIC | 1U | K 10V |
| | 4040844303 | ELECT | 47U | M 50V | | 4033456615 | CERAMIC | 1U | M 10V |
| C106 | 4040973201 | ELECT | 22U | M 50V | C1225 | 4033588316 | CERAMIC | 1U | K 10V |
| | 4040873006 | ELECT | 22U | M 50V | | 4033456615 | CERAMIC | 1U | M 10V |
| C111 | 4041032907 | CERAMIC | 0.01U | K 50V | C1226 | 4033588316 | CERAMIC | 1U | K 10V |
| | 4040901204 | CERAMIC | 0.01U | K 50V | | 4033456615 | CERAMIC | 1U | M 10V |
| | 4032152211 | CERAMIC | 0.01U | K 50V | C1228 | 4033588316 | CERAMIC | 1U | K 10V |
| C112 | 4041032907 | CERAMIC | 0.01U | K 50V | | 4033456615 | CERAMIC | 1U | M 10V |
| | 4040901204 | CERAMIC | 0.01U | K 50V | C124 | 4040970101 | ELECT | 1U | M 50V |
| | 4032152211 | CERAMIC | 0.01U | K 50V | | 4040843801 | ELECT | 1U | M 50V |
| C114 | 4041032907 | CERAMIC | 0.01U | K 50V | C125 | 4040972808 | ELECT | 0.47U | M 50V |
| | 4040901204 | CERAMIC | 0.01U | K 50V | | 4040843702 | ELECT | 0.47U | M 50V |
| | 4032152211 | CERAMIC | 0.01U | K 50V | C126 | 4032002625 | ELECT | 0.47U | M 50V |
| C115 | 4040972808 | ELECT | 0.47U | M 50V | C127 | 4041040209 | CERAMIC | 100P | J 50V |
| | 4040843702 | ELECT | 0.47U | M 50V | | 4040946403 | CERAMIC | 100P | J 50V |
| C1201 | 4040988205 | ELECT | 2200U | M 10V | | 4031573611 | CERAMIC | 100P | J 50V |
| | 4040854906 | ELECT | 2200U | M 10V | C1902 | 4040973201 | ELECT | 22U | M 50V |
| C1202 | 4041044900 | CERAMIC | 0.1U | K 50V | | 4040873006 | ELECT | 22U | M 50V |
| | 4040912606 | CERAMIC | 0.1U | K 50V | C201 | 4041159109 | MT-POLYEST | 0.22U | J 63V |
| | 4033670417 | CERAMIC | 0.1U | K 50V | | 4040935407 | MT-POLYEST | 0.22U | J 63V |
| C1204 | 4041047000 | CERAMIC | 0.056U | K 50V | | 4032377901 | MT-COMPO | 0.22U | J 50V |
| | 4040914808 | CERAMIC | 0.056U | K 50V | C202 | 4041044900 | CERAMIC | 0.1U | K 50V |
| | 4033082111 | CERAMIC | 0.056U | K 16V | | 4040912606 | CERAMIC | 0.1U | K 50V |
| | 4033565218 | CERAMIC | 0.056U | K 50V | | 4033670417 | CERAMIC | 0.1U | K 50V |
| C1205 | 4041047000 | CERAMIC | 0.056U | K 50V | C203 | 4040947004 | CERAMIC | 15P | J 50V |
| | 4040914808 | CERAMIC | 0.056U | K 50V | | 4031554214 | CERAMIC | 15P | J 50V |
| | 4033082111 | CERAMIC | 0.056U | K 16V | C204 | 4040970408 | ELECT | 47U | M 35V |
| | 4033565218 | CERAMIC | 0.056U | K 50V | | 4040854609 | ELECT | 47U | M 35V |
| C1206 | 4041045402 | CERAMIC | 1800P | K 50V | C205 | 4040970101 | ELECT | 1U | M 50V |
| | 4040913009 | CERAMIC | 1800P | K 50V | | 4040843801 | ELECT | 1U | M 50V |
| | 4031577015 | CERAMIC | 1800P | K 50V | C206 | 4041044900 | CERAMIC | 0.1U | K 50V |
| | 4032355513 | CERAMIC | 1800P | K 50V | | 4040912606 | CERAMIC | 0.1U | K 50V |
| C1207 | 4040973409 | ELECT | 4.7U | M 50V | | 4033670417 | CERAMIC | 0.1U | K 50V |
| | 4040844204 | ELECT | 4.7U | M 50V | C207 | 4041045303 | CERAMIC | 0.015U | K 50V |
| C1208 | 4041045402 | CERAMIC | 1800P | K 50V | | 4040912903 | CERAMIC | 0.015U | K 50V |
| | 4040913009 | CERAMIC | 1800P | K 50V | | 4032152419 | CERAMIC | 0.015U | K 50V |
| | 4031577015 | CERAMIC | 1800P | K 50V | C208 | 4040984009 | MT-POLYEST | 0.1U | J 63V |
| | 4032355513 | CERAMIC | 1800P | K 50V | | 4040852902 | MT-POLYEST | 0.1U | J 63V |
| C1209 | 4041047000 | CERAMIC | 0.056U | K 50V | | 4032378007 | MT-COMPO | 0.1U | J 50V |
| | 4040914808 | CERAMIC | 0.056U | K 50V | C209 | 4041159109 | MT-POLYEST | 0.22U | J 63V |
| | 4033082111 | CERAMIC | 0.056U | K 16V | | 4040935407 | MT-POLYEST | 0.22U | J 63V |
| | 4033565218 | CERAMIC | 0.056U | K 50V | | 4032377901 | MT-COMPO | 0.22U | J 50V |
| C1210 | 4040952602 | CERAMIC | 0.22U | Z 16V | C211 | 4041044900 | CERAMIC | 0.1U | K 50V |
| | 4040913405 | CERAMIC | 0.22U | K 50V | | 4040912606 | CERAMIC | 0.1U | K 50V |
| | 4032812412 | CERAMIC | 0.22U | K 16V | | 4033670417 | CERAMIC | 0.1U | K 50V |
| C1211 | 4041045303 | CERAMIC | 0.015U | K 50V | C212 | 4041081301 | ELECT | 47U | M 16V |
| | 4040912903 | CERAMIC | 0.015U | K 50V | | 4041174607 | ELECT | 47U | M 25V |
| | 4030709813 | CERAMIC | 0.015U | K 50V | | 4041157204 | ELECT | 47U | M 35V |
| | 4032152419 | CERAMIC | 0.015U | K 50V | | 4031904811 | ELECT | 47U | M 25V |
| C1212 | 4040973409 | ELECT | 4.7U | M 50V | | 4032118217 | ELECT | 47U | M 35V |
| | 4040844204 | ELECT | 4.7U | M 50V | C213 | 4040972808 | ELECT | 0.47U | M 50V |
| C1213 | 4041047000 | CERAMIC | 0.056U | K 50V | | 4040843702 | ELECT | 0.47U | M 50V |
| | 4040914808 | CERAMIC | 0.056U | K 50V | C214 | 4041045303 | CERAMIC | 0.015U | K 50V |
| | 4033082111 | CERAMIC | 0.056U | K 16V | | 4040912903 | CERAMIC | 0.015U | K 50V |
| | 4033565218 | CERAMIC | 0.056U | K 50V | | 4032152419 | CERAMIC | 0.015U | K 50V |
| C1216 | 4040970200 | ELECT | 10U | M 50V | C215 | 4040984009 | MT-POLYEST | 0.1U | J 63V |
| | 4040843900 | ELECT | 10U | M 50V | | 4040852902 | MT-POLYEST | 0.1U | J 63V |
| C1217 | 4040970101 | ELECT | 1U | M 50V | | 4032378007 | MT-COMPO | 0.1U | J 50V |
| | 4040843801 | ELECT | 1U | M 50V | C216 | 4041032907 | CERAMIC | 0.01U | K 50V |
| C1218 | 4040970101 | ELECT | 1U | M 50V | | 4040901204 | CERAMIC | 0.01U | K 50V |
| | 4040843801 | ELECT | 1U | M 50V | | 4032152211 | CERAMIC | 0.01U | K 50V |
| C1221 | 4033588316 | CERAMIC | 1U | K 10V | C218 | 4041032907 | CERAMIC | 0.01U | K 50V |
| | 4033456615 | CERAMIC | 1U | M 10V | | 4040901204 | CERAMIC | 0.01U | K 50V |
| C1222 | 4033588316 | CERAMIC | 1U | K 10V | | 4032152211 | CERAMIC | 0.01U | K 50V |
| | 4033456615 | CERAMIC | 1U | M 10V | C219 | 4040970408 | ELECT | 47U | M 35V |
| C1223 | 4033588316 | CERAMIC | 1U | K 10V | | 4040854609 | ELECT | 47U | M 35V |

| Ref. No. | Part No. | Description |
|---|---|---|
| C220 | 4040970408 | ELECT 47U M 35V |
| | 4040854609 | ELECT 47U M 35V |
| C221 | 4041032907 | CERAMIC 0.01U K 50V |
| | 4040901204 | CERAMIC 0.01U K 50V |
| | 4032152211 | CERAMIC 0.01U K 50V |
| C222 | 4040970200 | ELECT 10U M 50V |
| | 4040843900 | ELECT 10U M 50V |
| C223 | 4041151707 | ELECT 10U M 50V |
| | 4032113519 | ELECT 10U M 50V |
| C224 | 4040970200 | ELECT 10U M 50V |
| | 4040843900 | ELECT 10U M 50V |
| C225 | 4040970200 | ELECT 10U M 50V |
| | 4040843900 | ELECT 10U M 50V |
| C231 | 4041044900 | CERAMIC 0.1U K 50V |
| | 4040912606 | CERAMIC 0.1U K 50V |
| | 4033670417 | CERAMIC 0.1U K 50V |
| C232 | 4040970101 | ELECT 1U M 50V |
| | 4040843801 | ELECT 1U M 50V |
| C233 | 4041044900 | CERAMIC 0.1U K 50V |
| | 4040912606 | CERAMIC 0.1U K 50V |
| | 4033670417 | CERAMIC 0.1U K 50V |
| C234 | 4041045709 | CERAMIC 2200U K 50V |
| | 4040913306 | CERAMIC 2200P K 50V |
| | 4031134119 | CERAMIC 2200P K 50V |
| C235 | 4041044900 | CERAMIC 0.1U K 50V |
| | 4040912606 | CERAMIC 0.1U K 50V |
| | 4033670417 | CERAMIC 0.1U K 50V |
| C239 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| C240 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| C241 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| C242 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| C243 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| C246 | 4041032907 | CERAMIC 0.01U K 50V |
| | 4040901204 | CERAMIC 0.01U K 50V |
| | 4032152211 | CERAMIC 0.01U K 50V |
| C432 | 4041135103 | CERAMIC 3900P K 500V |
| | 4032753329 | CERAMIC 3900P K 500V |
| C433 | 4041135103 | CERAMIC 3900P K 500V |
| | 4032753329 | CERAMIC 3900P K 500V |
| C434 | 4041085705 | ELECT 330U M 35V |
| | 4041075201 | ELECT 330U M 35V |
| C435 | 4040831709 | MT-POLYPRO 6000P H 1.5K |
| | 4041021505 | MT-POLYPRO 6000P H 1.5V |
| | 4041165001 | MT-POLYPRO 6000P J 1.6K |
| | 4033727319 | MT-POLYPRO 6000P H 1.5K |
| C436 | 4041124206 | CERAMIC 270P K 3K |
| | 4041165209 | CERAMIC 270P K 2K |
| | 4041165100 | CERAMIC 270P K 2K |
| | 4032690416 | CERAMIC 270P K 3K |
| C438 | 4041124206 | CERAMIC 270P K 3K |
| | 4041165209 | CERAMIC 270P K 2K |
| | 4041165100 | CERAMIC 270P K 2K |
| | 4032690416 | CERAMIC 270P K 3K |
| C441 | 4040850205 | MT-POLYPRO 0.27U J 250V |
| | 4033467126 | MT-POLYPRO 0.27U J 250V |
| | 4033794311 | MT-POLYPRO 0.27U J 250V |
| | 4033726817 | MT-POLYPRO 0.27U J 250V |
| C471 | 4040565307 | NP-ELECT 2.2U M 100V |
| | 4041089000 | NP-ELECT 2.2U M 100V |
| | 4040849902 | NP-ELECT 2.2U M 100V |
| C486 | 4041054701 | ELECT 22U M 250V |
| | 4034553610 | ELECT 22U M 250V |
| | 4034320806 | ELECT 22U M 250V |
| C489 | 4041137107 | MT-POLYEST 0.47U J 250V |
| | 4030666106 | MT-POLYEST 0.47U J 250V |
| | 4034335008 | MT-POLYEST 0.47U J 250V |
| C491 | 4041136803 | CERAMIC 680P K 500V |
| | 4034164915 | CERAMIC 680P K 500V |
| C511 | 4041151707 | ELECT 10U M 50V |
| | 4032113519 | ELECT 10U M 50V |
| C514 | 4041151707 | ELECT 10U M 50V |
| | 4032113519 | ELECT 10U M 50V |
| C515 | 4041064106 | ELECT 1000U M 25V |
| | 4031904702 | ELECT 1000U M 25V |
| C517 | 4041157303 | ELECT 220U M 35V |
| | 4032114427 | ELECT 220U M 35V |
| C518 | 4030575329 | POLYESTER 1200P J 50V |
| | 4031793702 | POLYESTER 1200P J 50V |
| | 4030704937 | CERAMIC 1200P K 50V |
| C521 | 4041063505 | ELECT 1000U M 35V |
| | 4032112532 | ELECT 1000U M 35V |
| C524 | 4041155606 | POLYESTER 0.068U J 100V |
| | 4033074017 | POLYESTER 0.068U J 100V |
| | 4031429522 | POLYESTER 0.068U K 100V |
| | 4032890826 | POLYESTER 0.068U K 100V |
| C525 | 4041040209 | CERAMIC 100P J 50V |
| | 4040946403 | CERAMIC 100P J 50V |
| | 4031573611 | CERAMIC 100P J 50V |
| ⚠C601 | 4040881704 | MT-POLYEST 0.22U K 250V |
| | 4040888802 | MT-POLYEST 0.22U M 275V |
| | 4040941804 | MT-POLYEST 0.22U K 275V |
| | 4040966708 | MT-POLYPRO 0.22U M 275V |
| ⚠C602 | 4040881704 | MT-POLYEST 0.22U K 250V |
| | 4040888802 | MT-POLYEST 0.22U M 275V |
| | 4040941804 | MT-POLYEST 0.22U K 275V |
| | 4040966708 | MT-POLYPRO 0.22U M 275V |
| C603 | 4041157501 | CERAMIC 1000P K 1K |
| | 4041078400 | CERAMIC 1000P K 1K |
| | 4041157105 | CERAMIC 1000P K 1K |
| | 4040846307 | CERAMIC 1000P K 1K |
| | 4030766707 | CERAMIC 1000P K 1K |
| | 4032221313 | CERAMIC 1000P K 1K |
| | 4032719622 | CERAMIC 1000P K 1K |
| C604 | 4041157501 | CERAMIC 1000P K 1K |
| | 4041078400 | CERAMIC 1000P K 1K |
| | 4041157105 | CERAMIC 1000P K 1K |
| | 4040846307 | CERAMIC 1000P K 1K |
| | 4030766707 | CERAMIC 1000P K 1K |
| | 4032221313 | CERAMIC 1000P K 1K |
| | 4032719622 | CERAMIC 1000P K 1K |
| C605 | 4041036905 | CERAMIC 0.1U K 25V |
| | 4040950806 | CERAMIC 0.1U K 25V |
| | 4033423310 | CERAMIC 0.1U K 25V |
| | 4031640214 | CERAMIC 0.1U Z 25V |
| | 4033670417 | CERAMIC 0.1U K 50V |
| | 4033053517 | CERAMIC 0.1U Z 50V |
| C607 | 4041048304 | ELECT 220U M 400V |
| | 4041107100 | ELECT 150U M 400V |
| C610 | 4040904601 | POLYESTER 2200P K 63V |
| | 4041154203 | POLYESTER 2200P J 100 |
| | 4031792705 | POLYESTER 2200P J 50V |
| | 4031792606 | POLYESTER 2200P K 50V |
| | 4032770019 | POLYESTER 2200P K 100V |
| C611 | 4041155200 | ELECT 1U M 50V |
| | 4032112116 | ELECT 1U M 50V |
| C612 | 4030572130 | POLYESTER 0.1U J 50V |
| | 4031818306 | POLYESTER 0.1U J 50V |
| | 4030573107 | POLYESTER 0.1U K 50V |
| | 4031818207 | POLYESTER 0.1U K 50V |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|---|---|---|---|---|---|
| C613 | 4041153602 | POLYESTER 1000P J 100V | C803 | 4041032402 | CERAMIC 1000P K 50V |
| | 4031789200 | POLYESTER 1000P J 50V | | 4040901105 | CERAMIC 1000P K 50V |
| | 4031793900 | POLYESTER 1000P K 50V | | 4031133815 | CERAMIC 1000P K 50V |
| | 4030639407 | POLYESTER 0.001U K 100V | C804 | 4041032907 | CERAMIC 0.01U K 50V |
| | 4032888209 | POLYESTER 0.001U K 100V | | 4040901204 | CERAMIC 0.01U K 50V |
| C614 | 4040869900 | POLYPRO 0.022U J 630V | | 4032152211 | CERAMIC 0.01U K 50V |
| | 4030840318 | POLYPRO 0.022U J 630V | C805 | 4040970408 | ELECT 47U M 35V |
| C615 | 4041162406 | ELECT 33U M 35V | | 4040854609 | ELECT 47U M 35V |
| | 4032116015 | ELECT 33U M 35V | C806 | 4040970408 | ELECT 47U M 35V |
| C616 | 4041119707 | CERAMIC 470P K 2K | | 4040854609 | ELECT 47U M 35V |
| | 4041126804 | CERAMIC 470P K 2K | C807 | 4041032907 | CERAMIC 0.01U K 50V |
| | 4041112500 | CERAMIC 470P K 2K | | 4040901204 | CERAMIC 0.01U K 50V |
| | 4040862109 | CERAMIC 470P K 2K | | 4032152211 | CERAMIC 0.01U K 50V |
| C617 | 4041093700 | CERAMIC 390P K 3K | C808 | 4041032907 | CERAMIC 0.01U K 50V |
| | 4040862406 | CERAMIC 390P K 3K | | 4040901204 | CERAMIC 0.01U K 50V |
| | 4040850809 | CERAMIC 390P K 3K | | 4032152211 | CERAMIC 0.01U K 50V |
| | 4033242505 | CERAMIC 390P K 3K | C809 | 4040970408 | ELECT 47U M 35V |
| | 4032758423 | CERAMIC 390P K 3K | | 4040854609 | ELECT 47U M 35V |
| ⚠C627 | 4040733904 | CERAMIC 1000P K 250V | C810 | 4040947608 | CERAMIC 22P J 50V |
| | 4040732105 | CERAMIC 1000P M 250V | | 4031459915 | CERAMIC 22P J 50V |
| | 4040713302 | CERAMIC 1000P M 400V | C811 | 4041032907 | CERAMIC 0.01U K 50V |
| | 4041113903 | CERAMIC 1000P M 400V | | 4040901204 | CERAMIC 0.01U K 50V |
| | 4041039104 | CERAMIC 1000P M 400V | | 4032152211 | CERAMIC 0.01U K 50V |
| ⚠C628 | 4040733904 | CERAMIC 1000P K 250V | C812 | 4041156801 | ELECT 470U M 10V |
| | 4040732105 | CERAMIC 1000P M 250V | | 4032118514 | ELECT 470U M 10V |
| | 4040713302 | CERAMIC 1000P M 400V | C813 | 4040947608 | CERAMIC 22P J 50V |
| | 4041113903 | CERAMIC 1000P M 400V | | 4031459915 | CERAMIC 22P J 50V |
| | 4041039104 | CERAMIC 1000P M 400V | C814 | 4041032907 | CERAMIC 0.01U K 50V |
| ⚠C629 | 4040733904 | CERAMIC 1000P K 250V | | 4040901204 | CERAMIC 0.01U K 50V |
| | 4040732105 | CERAMIC 1000P M 250V | | 4032152211 | CERAMIC 0.01U K 50V |
| | 4040713302 | CERAMIC 1000P M 400V | C815 | 4040970408 | ELECT 47U M 35V |
| | 4041113903 | CERAMIC 1000P M 400V | | 4040854609 | ELECT 47U M 35V |
| | 4041039104 | CERAMIC 1000P M 400V | C816 | 4041032907 | CERAMIC 0.01U K 50V |
| C631 | 4041157501 | CERAMIC 1000P K 1K | | 4040901204 | CERAMIC 0.01U K 50V |
| | 4041078400 | CERAMIC 1000P K 1K | | 4032152211 | CERAMIC 0.01U K 50V |
| | 4041157105 | CERAMIC 1000P K 1K | C817 | 4040970408 | ELECT 47U M 35V |
| | 4040846307 | CERAMIC 1000P K 1K | | 4040854609 | ELECT 47U M 35V |
| | 4030766707 | CERAMIC 1000P K 1K | C818 | 4040970408 | ELECT 47U M 35V |
| | 4032221313 | CERAMIC 1000P K 1K | | 4040854609 | ELECT 47U M 35V |
| | 4032719622 | CERAMIC 1000P K 1K | C819 | 4041032907 | CERAMIC 0.01U K 50V |
| C632 | 4041078202 | CERAMIC 470P K 1K | | 4040901204 | CERAMIC 0.01U K 50V |
| | 4040861508 | CERAMIC 470P K 1K | | 4032152211 | CERAMIC 0.01U K 50V |
| | 4032475003 | CERAMIC 470P K 1K | C820 | 4040947608 | CERAMIC 22P J 50V |
| C633 | 4041078202 | CERAMIC 470P K 1K | | 4031459915 | CERAMIC 22P J 50V |
| | 4040861508 | CERAMIC 470P K 1K | C821 | 4040947608 | CERAMIC 22P J 50V |
| | 4032475003 | CERAMIC 470P K 1K | | 4031459915 | CERAMIC 22P J 50V |
| C634 | 4041078202 | CERAMIC 470P K 1K | | | |
| | 4040861508 | CERAMIC 470P K 1K | **RESISTOR** | | |
| | 4032475003 | CERAMIC 470P K 1K | R001 | 4012561712 | MT-GLAZE 33K JA 1/10W |
| C637 | 4041139804 | CERAMIC 150P K 50V | | 4011054215 | MT-GLAZE 33K JA 1/16W |
| | 4031037529 | CERAMIC 150P K 50V | R002 | 4012561712 | MT-GLAZE 33K JA 1/10W |
| C641 | 4040739005 | ELECT 220U M 160V | | 4011054215 | MT-GLAZE 33K JA 1/16W |
| | 4040973706 | ELECT 220U M 160V | R003 | 4011623114 | MT-GLAZE 3.3K JA 1/10W |
| C643 | 4041080809 | ELECT 470U M 35V | | 4011054116 | MT-GLAZE 3.3K JA 1/16W |
| | 4032119620 | ELECT 470U M 35V | R004 | 4011623114 | MT-GLAZE 3.3K JA 1/10W |
| C644 | 4041064106 | ELECT 1000U M 25V | | 4011054116 | MT-GLAZE 3.3K JA 1/16W |
| | 4031904702 | ELECT 1000U M 25V | R005 | 4010258208 | CARBON 22K JA 1/6W |
| C645 | 4041063604 | ELECT 2200U M 25V | | 4021025301 | CARBON 22K JA 1/6W |
| | 4032115127 | ELECT 2200U M 25V | | 4020941701 | CARBON 22K JA 1/6W |
| C662 | 4041081509 | ELECT 100U M 25V | R007 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4031905214 | ELECT 100U M 25V | | 4011050514 | MT-GLAZE 1K JA 1/16W |
| C801 | 4041032907 | CERAMIC 0.01U K 50V | R008 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4040901204 | CERAMIC 0.01U K 50V | | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| | 4032152211 | CERAMIC 0.01U K 50V | R009 | 4012567615 | MT-GLAZE 3.9K JA 1/10W |
| C802 | 4041032907 | CERAMIC 0.01U K 50V | | 4011054611 | MT-GLAZE 3.9K JA 1/16W |
| | 4040901204 | CERAMIC 0.01U K 50V | R1001 | 4012562719 | MT-GLAZE 75 JA 1/10W |
| | 4032152211 | CERAMIC 0.01U K 50V | | 4011134412 | MT-GLAZE 75 JA 1/16W |

| Ref. No. | Part No. | Description |
|---|---|---|
| R1002 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1003 | 4012567219 | MT-GLAZE 18K JA 1/10W |
| | 4011052112 | MT-GLAZE 18K JA 1/16W |
| R1004 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1005 | 4012567219 | MT-GLAZE 18K JA 1/10W |
| | 4011052112 | MT-GLAZE 18K JA 1/16W |
| R1006 | 4012566915 | MT-GLAZE 680 JA 1/10W |
| | 4011056516 | MT-GLAZE 680 JA 1/16W |
| R1007 | 4011505816 | MT-GLAZE 100K JA 1/10W |
| | 4011050712 | MT-GLAZE 100K JA 1/16W |
| R1008 | 4012566915 | MT-GLAZE 680 JA 1/10W |
| | 4011056516 | MT-GLAZE 680 JA 1/16W |
| R1009 | 4011505816 | MT-GLAZE 100K JA 1/10W |
| | 4011050712 | MT-GLAZE 100K JA 1/16W |
| R101 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R1010 | 4012562719 | MT-GLAZE 75 JA 1/10W |
| | 4011134412 | MT-GLAZE 75 JA 1/16W |
| R1011 | 4011505816 | MT-GLAZE 100K JA 1/10W |
| | 4011050712 | MT-GLAZE 100K JA 1/16W |
| R1012 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1013 | 4012567219 | MT-GLAZE 18K JA 1/10W |
| | 4011052112 | MT-GLAZE 18K JA 1/16W |
| R1014 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1015 | 4012567219 | MT-GLAZE 18K JA 1/10W |
| | 4011052112 | MT-GLAZE 18K JA 1/16W |
| R1016 | 4012562719 | MT-GLAZE 75 JA 1/10W |
| | 4011134412 | MT-GLAZE 75 JA 1/16W |
| R1018 | 4012562719 | MT-GLAZE 75 JA 1/10W |
| | 4011134412 | MT-GLAZE 75 JA 1/16W |
| R102 | 4011623718 | MT-GLAZE 4.7K JA 1/10W |
| | 4011055311 | MT-GLAZE 4.7K JA 1/16W |
| R1020 | 4012562719 | MT-GLAZE 75 JA 1/10W |
| | 4011134412 | MT-GLAZE 75 JA 1/16W |
| R1021 | 4012562719 | MT-GLAZE 75 JA 1/10W |
| | 4011134412 | MT-GLAZE 75 JA 1/16W |
| R1025 | 4011622919 | MT-GLAZE 220 JA 1/10W |
| | 4011052716 | MT-GLAZE 220 JA 1/16W |
| R1026 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1027 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1028 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1029 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R103 | 4010618002 | OXIDE-MT 39K JA 1W |
| R1030 | 4012558712 | MT-GLAZE 22 JA 1/10W |
| | 4011052617 | MT-GLAZE 22 JA 1/16W |
| R1031 | 4010272105 | CARBON 56 JA 1/6W |
| | 4021037205 | CARBON 56 JA 1/6W |
| | 4020943804 | CARBON 56 JA 1/6W |
| R1032 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R1033 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R1034 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R1035 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R106 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R107 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R109 | 4011623015 | MT-GLAZE 22K JA 1/10W |
| | 4011052914 | MT-GLAZE 22K JA 1/16W |
| R111 | 4011622414 | MT-GLAZE 1.2K JA 1/10W |
| | 4011051016 | MT-GLAZE 1.2K JA 1/16W |
| R112 | 4011624111 | MT-GLAZE 5.6K JA 1/10W |
| | 4011056011 | MT-GLAZE 5.6K JA 1/16W |
| R114 | 4011523216 | MT-GLAZE 330 JA 1/10W |
| | 4011054017 | MT-GLAZE 330 JA 1/16W |
| R115 | 4010272105 | CARBON 56 JA 1/6W |
| | 4021037205 | CARBON 56 JA 1/6W |
| | 4020943804 | CARBON 56 JA 1/6W |
| R116 | 4012564119 | MT-GLAZE 56 JA 1/10W |
| | 4011055816 | MT-GLAZE 56 JA 1/16W |
| R1201 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R1202 | 4011523216 | MT-GLAZE 330 JA 1/10W |
| | 4011054017 | MT-GLAZE 330 JA 1/16W |
| R121 | 4010264308 | CARBON 3.3K JA 1/6W |
| | 4021086104 | CARBON 3.3K JA 1/6W |
| | 4020942708 | CARBON 3.3K JA 1/6W |
| R1212 | 4011523216 | MT-GLAZE 330 JA 1/10W |
| | 4011054017 | MT-GLAZE 330 JA 1/16W |
| R1213 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R1216 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R1217 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R1218 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R1219 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R122 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R1220 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R1221 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R1222 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R123 | 4010247004 | CARBON 1K JA 1/6W |
| | 4021027503 | CARBON 1K JA 1/6W |
| | 4020939500 | CARBON 1K JA 1/6W |
| R124 | 4012565314 | MT-GLAZE 56K JA 1/10W |
| | 4011058114 | MT-GLAZE 56K JA 1/16W |
| R125 | 4010257805 | CARBON 2.2K JA 1/6W |
| | 4021026308 | CARBON 2.2K JA 1/6W |
| | 4020941602 | CARBON 2.2K JA 1/6W |
| R126 | 4012558712 | MT-GLAZE 22 JA 1/10W |
| | 4011052617 | MT-GLAZE 22 JA 1/16W |
| R1902 | 4012560418 | MT-GLAZE 12K JA 1/10W |
| | 4011051115 | MT-GLAZE 12K JA 1/16W |
| R1903 | 4011624111 | MT-GLAZE 5.6K JA 1/10W |
| | 4011056011 | MT-GLAZE 5.6K JA 1/16W |
| R1904 | 4012567615 | MT-GLAZE 3.9K JA 1/10W |
| | 4011054611 | MT-GLAZE 3.9K JA 1/16W |
| R1905 | 4011506110 | MT-GLAZE 2.2K JA 1/10W |
| | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| R1906 | 4011622810 | MT-GLAZE 1.8K JA 1/10W |
| | 4011052013 | MT-GLAZE 1.8K JA 1/16W |
| R1907 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R1911 | 4011523216 | MT-GLAZE 330 JA 1/10W |
| | 4011054017 | MT-GLAZE 330 JA 1/16W |
| R1912 | 4011622919 | MT-GLAZE 220 JA 1/10W |
| | 4011052716 | MT-GLAZE 220 JA 1/16W |

| Ref. No. | Part No. | Description |
|---|---|---|
| R1913 | 4011523216 | MT-GLAZE 330 JA 1/10W |
| | 4011054017 | MT-GLAZE 330 JA 1/16W |
| R1916 | 4011623015 | MT-GLAZE 22K JA 1/10W |
| | 4011052914 | MT-GLAZE 22K JA 1/16W |
| R201 | 4010727407 | OXIDE-MT 47 JA 3W |
| R202 | 4010736409 | OXIDE-MT 82 JA 3W |
| R205 | 4010247707 | CARBON 100K JA 1/6W |
| | 4021030206 | CARBON 100K JA 1/6W |
| | 4020939708 | CARBON 100K JA 1/6W |
| R206 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R207 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R208 | 4012566311 | MT-GLAZE 47K JA 1/10W |
| | 4011055410 | MT-GLAZE 47K JA 1/16W |
| R210 | 4010682409 | OXIDE-MT 47 JA 2W |
| R211 | 4012561712 | MT-GLAZE 33K JA 1/10W |
| | 4011054215 | MT-GLAZE 33K JA 1/16W |
| R212 | 4011623114 | MT-GLAZE 3.3K JA 1/10W |
| | 4011054116 | MT-GLAZE 3.3K JA 1/16W |
| R215 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R216 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R217 | 4012560210 | MT-GLAZE 120K JA 1/10W |
| | 4011051214 | MT-GLAZE 120K JA 1/16W |
| R218 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R219 | 4011623718 | MT-GLAZE 4.7K JA 1/10W |
| | 4011055311 | MT-GLAZE 4.7K JA 1/16W |
| R220 | 4012560111 | MT-GLAZE 8.2K JA 1/10W |
| | 4011057414 | MT-GLAZE 8.2K JA 1/16W |
| R221 | 4012567615 | MT-GLAZE 3.9K JA 1/10W |
| | 4011054611 | MT-GLAZE 3.9K JA 1/16W |
| R222 | 4012559719 | MT-GLAZE 82K JA 1/10W |
| | 4011057513 | MT-GLAZE 82K JA 1/16W |
| R223 | 4010582303 | OXIDE-MT 100 JA 1W |
| R224 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R227 | 4011622711 | MT-GLAZE 180 JA 1/10W |
| | 4011051917 | MT-GLAZE 180 JA 1/16W |
| R228 | 4011622711 | MT-GLAZE 180 JA 1/10W |
| | 4011051917 | MT-GLAZE 180 JA 1/16W |
| R229 | 4011622711 | MT-GLAZE 180 JA 1/10W |
| | 4011051917 | MT-GLAZE 180 JA 1/16W |
| R231 | 4011506110 | MT-GLAZE 2.2K JA 1/10W |
| | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| R232 | 4011506110 | MT-GLAZE 2.2K JA 1/10W |
| | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| R233 | 4011506110 | MT-GLAZE 2.2K JA 1/10W |
| | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| R234 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R235 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R236 | 4011623015 | MT-GLAZE 22K JA 1/10W |
| | 4011052914 | MT-GLAZE 22K JA 1/16W |
| R238 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R239 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R246 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R248 | 4011506011 | MT-GLAZE 0.000 ZA 1/10W |
| | 4011057919 | MT-GLAZE 0.000 ZA 1/16W |
| R355 | 4010126953 | CARBON 10K JA 1/4W |
| | 4010127009 | CARBON 10K JA 1/4W |
| R355 | 4021027701 | CARBON 10K JA 1/4W |
| | 4020935700 | CARBON 10K JA 1/4W |
| R421 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R422 | 4010213712 | CARBON 56K GA 1/4W |
| | 4010214036 | CARBON 56K JA 1/4W |
| | 4010214105 | CARBON 56K JA 1/4W |
| | 4021119307 | CARBON 56K JA 1/4W |
| | 4020938602 | CARBON 56K JA 1/4W |
| R423 | 4010224104 | CARBON 68K JA 1/4W |
| | 4021025806 | CARBON 68K JA 1/4W |
| | 4020938800 | CARBON 68K JA 1/4W |
| R424 | 4010247004 | CARBON 1K JA 1/6W |
| | 4021027503 | CARBON 1K JA 1/6W |
| | 4020939500 | CARBON 1K JA 1/6W |
| R426 | 4010247400 | CARBON 10K JA 1/6W |
| | 4021031500 | CARBON 10K JA 1/6W |
| | 4020939609 | CARBON 10K JA 1/6W |
| R433 | 4010071104 | CARBON 1K JA 1/2W |
| | 4021039100 | CARBON 1K JA 1/2W |
| | 4020922601 | CARBON 1K JA 1/2W |
| R434 | 4010660308 | OXIDE-MT 180 JA 2W |
| R435 | 4020873200 | WIRE WOUND 3.3 KA 5W |
| | 4020977908 | WIRE WOUND 3.3 KA 5W |
| | 4020925701 | WIRE WOUND 3.3 KA 5W |
| R441 | 4010684601 | OXIDE-MT 4.7K JA 2W |
| R445 | 4010697106 | OXIDE-MT 820 JA 2W |
| R471 | 4012566618 | MT-GLAZE 68K JA 1/10W |
| | 4011058213 | MT-GLAZE 68K JA 1/16W |
| R472 | 4012560111 | MT-GLAZE 8.2K JA 1/10W |
| | 4011057414 | MT-GLAZE 8.2K JA 1/16W |
| R473 | 4010258634 | CARBON 220K GA 1/6W |
| | 4010258703 | CARBON 220K JA 1/6W |
| | 4021170209 | CARBON 220K JA 1/6W |
| | 4021170100 | CARBON 220K JA 1/6W |
| R474 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R481 | 4010663507 | OXIDE-MT 2.7 JA 2W |
| R485 | 4010380919 | MT-GLAZE 220K JA 1/10W |
| R486 | 4010380919 | MT-GLAZE 220K JA 1/10W |
| R488 | 4010067602 | CARBON 1 JA 1/2W |
| | 4021042100 | CARBON 1 JA 1/2W |
| R501 | 4010670802 | OXIDE-MT 2.7K JA 2W |
| R502 | 4012565314 | MT-GLAZE 56K JA 1/10W |
| | 4011058114 | MT-GLAZE 56K JA 1/16W |
| R514 | 4010267002 | CARBON 3.9K JA 1/6W |
| | 4021085800 | CARBON 3.9K JA 1/6W |
| | 4020943101 | CARBON 3.9K JA 1/6W |
| R515 | 4010275413 | CARBON 6.8K GA 1/6W |
| | 4010275502 | CARBON 6.8K JA 1/6W |
| | 4021030008 | CARBON 6.8K JA 1/6W |
| | 4020944603 | CARBON 6.8K JA 1/6W |
| R516 | 4010247331 | CARBON 10K GA 1/6W |
| | 4010247400 | CARBON 10K JA 1/6W |
| | 4021031500 | CARBON 10K JA 1/6W |
| | 4020939609 | CARBON 10K JA 1/6W |
| R518 | 4010644407 | OXIDE-MT 1.2 JA 2W |
| R522 | 4010257409 | CARBON 220 JA 1/6W |
| | 4021025608 | CARBON 220 JA 1/6W |
| | 4020941503 | CARBON 220 JA 1/6W |
| R523 | 4010200752 | CARBON 470 JA 1/4W |
| | 4010200801 | CARBON 470 JA 1/4W |
| | 4021027404 | CARBON 470 JA 1/4W |
| | 4020938206 | CARBON 470 JA 1/4W |
| | 4020842107 | CARBON 470 JA 1/4W |
| R525 | 4010656509 | OXIDE-MT 150 JA 2W |
| ⚠R601 | 4010088607 | CARBON 220K JA 1/2W |

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|---|---|---|---|---|---|
| | 4021025103 | CARBON 220K JA 1/2W | | 4020943101 | CARBON 3.9K JA 1/6W |
| | 4020924100 | CARBON 220K JA 1/2W | R801 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| ⚠R602 | 4020826909 | WIRE WOUND 1.8 KA 5W | | 4011050613 | MT-GLAZE 10K JA 1/16W |
| | 4020998309 | WIRE WOUND 1.8 KA 5W | R802 | 4011506110 | MT-GLAZE 2.2K JA 1/10W |
| R603 | 4010643400 | OXIDE-MT 0.82 JA 2W | | 4011052815 | MT-GLAZE 2.2K JA 1/16W |
| R604 | 4010643400 | OXIDE-MT 0.82 JA 2W | R805 | 4010247004 | CARBON 1K JA 1/6W |
| R605 | 4010246938 | CARBON 1K GA 1/6W | | 4021027503 | CARBON 1K JA 1/6W |
| | 4010247004 | CARBON 1K JA 1/6W | | 4020939500 | CARBON 1K JA 1/6W |
| | 4021027503 | CARBON 1K JA 1/6W | R806 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4020939500 | CARBON 1K JA 1/6W | | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R606 | 4010632800 | OXIDE-MT 68K JA 1W | R809 | 4010269600 | CARBON 470 JA 1/6W |
| R607 | 4010260409 | CARBON 27 JA 1/6W | | 4021027909 | CARBON 470 JA 1/6W |
| R609 | 4010246700 | CARBON 100 JA 1/6W | | 4020943507 | CARBON 470 JA 1/6W |
| | 4021032101 | CARBON 100 JA 1/6W | R813 | 4010246700 | CARBON 100 JA 1/6W |
| | 4020939401 | CARBON 100 JA 1/6W | | 4021032101 | CARBON 100 JA 1/6W |
| R610 | 4010247004 | CARBON 1K JA 1/6W | | 4020939401 | CARBON 100 JA 1/6W |
| | 4021027503 | CARBON 1K JA 1/6W | R814 | 4010246700 | CARBON 100 JA 1/6W |
| | 4020939500 | CARBON 1K JA 1/6W | | 4021032101 | CARBON 100 JA 1/6W |
| R611 | 4010249305 | CARBON 1.2K JA 1/6W | | 4020939401 | CARBON 100 JA 1/6W |
| | 4021121003 | CARBON 1.2K JA 1/6W | R815 | 4012567318 | MT-GLAZE 6.8K JA 1/10W |
| | 4020940001 | CARBON 1.2K JA 1/6W | | 4011056615 | MT-GLAZE 6.8K JA 1/16W |
| R613 | 4010088607 | CARBON 220K JA 1/2W | R816 | 4012567318 | MT-GLAZE 6.8K JA 1/10W |
| | 4021025103 | CARBON 220K JA 1/2W | | 4011056615 | MT-GLAZE 6.8K JA 1/16W |
| | 4020924100 | CARBON 220K JA 1/2W | R817 | 4010246700 | CARBON 100 JA 1/6W |
| R614 | 4010082605 | CARBON 180K JA 1/2W | | 4021032101 | CARBON 100 JA 1/6W |
| | 4021114500 | CARBON 180K JA 1/2W | | 4020939401 | CARBON 100 JA 1/6W |
| | 4021109803 | CARBON 180K JA 1/2W | R818 | 4010246700 | CARBON 100 JA 1/6W |
| ⚠R631 | 4020008305 | SOLID 5.6M KA 1/2W | | 4021032101 | CARBON 100 JA 1/6W |
| | 4021103801 | SOLID 5.6M KA 1/2W | | 4020939401 | CARBON 100 JA 1/6W |
| | 4020975706 | CARBON 5.6M KA 1/2W | R820 | 4010257102 | CARBON 22 JA 1/6W |
| ⚠R632 | 4020008305 | SOLID 5.6M KA 1/2W | | 4020941404 | CARBON 22 JA 1/6W |
| | 4021103801 | SOLID 5.6M KA 1/2W | R821 | 4010257102 | CARBON 22 JA 1/6W |
| | 4020975706 | CARBON 5.6M KA 1/2W | | 4020941404 | CARBON 22 JA 1/6W |
| R635 | 4010075805 | CARBON 120K JA 1/2W | R822 | 4012558712 | MT-GLAZE 22 JA 1/10W |
| | 4021086807 | CARBON 120K JA 1/2W | | 4011052617 | MT-GLAZE 22 JA 1/16W |
| | 4020923103 | CARBON 120K JA 1/2W | R823 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| R636 | 4011624111 | MT-GLAZE 5.6K JA 1/10W | | 4011050415 | MT-GLAZE 100 JA 1/16W |
| | 4011056011 | MT-GLAZE 5.6K JA 1/16W | R824 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| R639 | 4010269808 | CARBON 4.7K GA 1/6W | | 4011050415 | MT-GLAZE 100 JA 1/16W |
| | 4010269907 | CARBON 4.7K JA 1/6W | R825 | 4011623015 | MT-GLAZE 22K JA 1/10W |
| | 4021031708 | CARBON 4.7K JA 1/6W | | 4011052914 | MT-GLAZE 22K JA 1/16W |
| | 4020943606 | CARBON 4.7K JA 1/6W | R827 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4020849304 | CARBON 4.7K JA 1/6W | | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R642 | 4011505816 | MT-GLAZE 100K JA 1/10W | R828 | 4011506219 | MT-GLAZE 1K JA 1/10W |
| | 4011050712 | MT-GLAZE 100K JA 1/16W | | 4011050514 | MT-GLAZE 1K JA 1/16W |
| R643 | 4010651702 | OXIDE-MT 12 JA 2W | R829 | 4010103102 | CARBON 470 JA 1/2W |
| R644 | 4010703005 | OXIDE-MT 1 JA 3W | | 4021083301 | CARBON 470 JA 1/2W |
| R645 | 4010251902 | CARBON 15K JA 1/6W | | 4020925206 | CARBON 470 JA 1/2W |
| | 4021040007 | CARBON 15K JA 1/6W | | 4020862402 | CARBON 470 JA 1/2W |
| | 4020940605 | CARBON 15K JA 1/6W | R831 | 4010588008 | OXIDE-MT 120 JA 1W |
| R668 | 4010643707 | OXIDE-MT 1 JA 2W | R832-TM | 4010103102 | CARBON 470 JA 1/2W |
| | 4010146050 | CARBON 150K JA 1/4W | R833-TM | 4011050712 | MT-GLAZE 100K JA 1/16W |
| | 4010146109 | CARBON 150K JA 1/4W | R834 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| | 4021117402 | CARBON 150K JA 1/4W | | 4011050613 | MT-GLAZE 10K JA 1/16W |
| R685 | 4021109605 | CARBON 150K JA 1/4W | R835 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| R686 | 4010126953 | CARBON 10K JA 1/4W | | 4011050613 | MT-GLAZE 10K JA 1/16W |
| | 4010127009 | CARBON 10K JA 1/4W | R838 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| | 4021027701 | CARBON 10K JA 1/4W | | 4011050415 | MT-GLAZE 100 JA 1/16W |
| R686 | 4020935700 | CARBON 10K JA 1/4W | R839 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| R687 | 4010191852 | CARBON 3.9K JA 1/4W | | 4011050415 | MT-GLAZE 100 JA 1/16W |
| | 4010191901 | CARBON 3.9K JA 1/4W | R840 | 4012558712 | MT-GLAZE 22 JA 1/10W |
| | 4021085800 | CARBON 3.9K JA 1/6W | | 4011052617 | MT-GLAZE 22 JA 1/16W |
| | 4020943101 | CARBON 3.9K JA 1/6W | R842 | 4012556510 | MT-GLAZE 100 JA 1/10W |
| R688 | 4011623015 | MT-GLAZE 22K JA 1/10W | | 4011050415 | MT-GLAZE 100 JA 1/16W |
| | 4011052914 | MT-GLAZE 22K JA 1/16W | R843 | 4011505915 | MT-GLAZE 10K JA 1/10W |
| R690 | 4010267002 | CARBON 3.9K JA 1/6W | | 4011050613 | MT-GLAZE 10K JA 1/16W |
| | 4021085800 | CARBON 3.9K JA 1/6W | R886 | 4011623015 | MT-GLAZE 22K JA 1/10W |

| Ref. No. | Part No. | Description |
|---|---|---|
| | 4011052914 | MT-GLAZE 22K JA 1/16W |
| R889 | 4012566618 | MT-GLAZE 68K JA 1/10W |
| | 4011058213 | MT-GLAZE 68K JA 1/16W |
| R890-TM | 4010258703 | CARBON 220K JA 1/6W |
| | 4021170209 | CARBON 220K JA 1/6W |
| | 4021170100 | CARBON 220K JA 1/6W |
| **VARIABLE RESISTOR** | | |
| VR631 | 6450065514 | VR,SEMI,2.2K N |
| | 6450035579 | VR,SEMI,2.2K N |
| | 6450952586 | VR,SEMI,2.2K N |
| **TRANSFORMER** | | |
| T431 | 6450833847 | TRANS,DRIVE |
| | 6520011144 | TRANS,DRIVE |
| ⚠T471 | 6520018303 | TRANS,FLYBACK |
| ⚠T611A | 6450938207 | TRANS,POWER,PULSE |
| **COIL** | | |
| L1901 | 6450062490 | INDUCTOR,1U K |
| L431 | 6520010468 | CORE,PIPE |
| L432 | 6520010468 | CORE,PIPE |
| L441 | 6520010581 | COIL,LINEARITY |
| ⚠L601 | 6520001961 | LINE FILTER |
| L602 | 6100785953 | PIPE CORE |
| | 6520010130 | CORE,PIPE |
| L632 | 6100785953 | PIPE CORE |
| | 6520010130 | CORE,PIPE |
| L633 | 6100785953 | PIPE CORE |
| | 6520010130 | CORE,PIPE |
| L634 | 6100785953 | PIPE CORE |
| | 6520010130 | CORE,PIPE |
| L635 | 6100785953 | PIPE CORE |
| | 6520010130 | CORE,PIPE |
| L801 | 6450082894 | INDUCTOR,5.6U K |
| L803 | 6450257797 | INDUCTOR,120 OHM |
| | 6520016996 | INDUCTOR,120 OHM |
| L804 | 6450257797 | INDUCTOR,120 OHM |
| | 6520016996 | INDUCTOR,120 OHM |
| **DIODE** | | |
| DK201-TM | 4070638606 | ZENER DIODE MTZJ5.1A |
| | 4080476403 | ZENER DIODE MTZJ5.1A |
| D001 | 4080082406 | DIODE 1N4148 |
| | 4080585600 | DIODE 1SS133ST |
| | 4070124406 | DIODE 1SS133 |
| | 4070134306 | DIODE 1S2076A |
| D005 | 4080082406 | DIODE 1N4148 |
| | 4080585600 | DIODE 1SS133ST |
| | 4070124406 | DIODE 1SS133 |
| | 4070134306 | DIODE 1S2076A |
| D1001 | 4072505817 | ZENER DIODE KDZ10V |
| | 4072065618 | ZENER DIODE UDZS-TE-1710B |
| D1009 | 4072505817 | ZENER DIODE KDZ10V |
| | 4072065618 | ZENER DIODE UDZS-TE-1710B |
| D1010 | 4072505817 | ZENER DIODE KDZ10V |
| | 4072065618 | ZENER DIODE UDZS-TE-1710B |
| D1011 | 4072505817 | ZENER DIODE KDZ10V |
| | 4072065618 | ZENER DIODE UDZS-TE-1710B |
| D1012 | 4072505817 | ZENER DIODE KDZ10V |
| | 4072065618 | ZENER DIODE UDZS-TE-1710B |
| D102 | 4070995600 | ZENER DIODE MTZJ6.8A |
| | 4070574003 | ZENER DIODE RD6.8EB1 |
| | 4080478506 | ZENER DIODE MTZJ6.8A |
| D103 | 4071000224 | ZENER DIODE MTZJ36A |
| | 4070562307 | ZENER DIODE RD36EB1 |
| | 4080476106 | ZENER DIODE MTZJ36A |

| Ref. No. | Part No. | Description |
|---|---|---|
| D105 | 4070638220 | ZENER DIODE MTZJ10A |
| | 4070996122 | ZENER DIODE MTZJ10B |
| | 4080472009 | ZENER DIODE MTZJ10A |
| | 4080472207 | ZENER DIODE MTZJ10B-52 |
| D106 | 4070638220 | ZENER DIODE MTZJ10A |
| | 4070996122 | ZENER DIODE MTZJ10B |
| | 4080472009 | ZENER DIODE MTZJ10A |
| | 4080472207 | ZENER DIODE MTZJ10B-52 |
| D1201 | 4070058602 | DIODE ERA15-02-V1 |
| | 4080456801 | DIODE ERA15-02 |
| | 4080583101 | DIODE ERA15-02 |
| D122 | 4080627003 | DIODE 1SS356WS |
| | 4071661118 | DIODE 1SS356-TW11 |
| D1902 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D1903 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D1904 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D1905 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D1910 | 4080512408 | LED 204HD |
| | 4080626907 | LED BT-202YX-31 |
| D1910A | 6103039954 | HOLDER LED-C4LA |
| | 6103357706 | HOLDER LED-BD6A |
| D201 | 4070638606 | ZENER DIODE MTZJ5.1A |
| | 4080476403 | ZENER DIODE MTZJ5.1A |
| D202 | 4080082406 | DIODE 1N4148 |
| | 4080585600 | DIODE 1SS133ST |
| | 4070124406 | DIODE 1SS133 |
| | 4070134306 | DIODE 1S2076A |
| D203 | 4072217116 | ZENER DIODE UDZS-TE-1712B |
| D204 | 4072217116 | ZENER DIODE UDZS-TE-1712B |
| D205 | 4072217116 | ZENER DIODE UDZS-TE-1712B |
| D421 | 4070997228 | ZENER DIODE MTZJ16A |
| | 4070547027 | ZENER DIODE RD16EB1 |
| | 4070547215 | ZENER DIODE RD16EB3 |
| | 4080475307 | ZENER DIODE MTZJ16A-52 |
| D485 | 4070077405 | DIODE EU1 |
| | 4080457709 | DIODE EU1 |
| | 4080584207 | DIODE EU1 |
| D507 | 4071182207 | ZENER DIODE 1Z75 |
| D508 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D509 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D512 | 4070058602 | DIODE ERA15-02-V1 |
| | 4080456801 | DIODE ERA15-02 |
| | 4080583101 | DIODE ERA15-02 |
| D603 | 4070066300 | DIODE ERC05-10BV1 |
| | 4070096901 | DIODE RM11C |
| | 4080457501 | DIODE ERC05-10B |
| | 4080583309 | DIODE RM11C |
| D604 | 4070066300 | DIODE ERC05-10BV1 |
| | 4070096901 | DIODE RM11C |
| | 4080457501 | DIODE ERC05-10B |
| | 4080583309 | DIODE RM11C |
| D605 | 4070066300 | DIODE ERC05-10BV1 |
| | 4070096901 | DIODE RM11C |
| | 4080457501 | DIODE ERC05-10B |
| | 4080583309 | DIODE RM11C |

| Ref. No. | Part No. | Description |
|---|---|---|
| D606 | 4070066300 | DIODE ERC05-10BV1 |
| | 4070096901 | DIODE RM11C |
| | 4080457501 | DIODE ERC05-10B |
| | 4080583309 | DIODE RM11C |
| D609 | 4080082406 | DIODE 1N4148 |
| | 4080585600 | DIODE 1SS133ST |
| | 4070124406 | DIODE 1SS133 |
| | 4070134306 | DIODE 1S2076A |
| ⚠D610 | 4072348701 | PHOTO COUPLE PC123X5YFZ |
| | 4072303908 | PHOTO COUPLE PC123Y52 |
| D611 | 4071468113 | DIODE EG01C |
| | 4080456603 | DIODE EG01C |
| | 4080653408 | DIODE EG01C |
| D612 | 4070077405 | DIODE EU1 |
| | 4080457709 | DIODE EU1 |
| | 4080584207 | DIODE EU1 |
| D613 | 4070077405 | DIODE EU1 |
| | 4080457709 | DIODE EU1 |
| | 4080584207 | DIODE EU1 |
| D614 | 4070995422 | ZENER DIODE MTZJ6.2B |
| | 4080627409 | ZENER DIODE MTZJ6.2B |
| D631 | 4070098806 | DIODE RU3AM |
| | 4080584405 | DIODE RU3AM |
| | 4080584405 | DIODE RU3AM |
| D632A | 4080633707 | DIODE GRU4YX |
| D633 | 4070077603 | DIODE EU2 |
| | 4080458102 | DIODE EU2Z |
| | 4080583606 | DIODE EU2 |
| D634 | 4070098905 | DIODE RU3M |
| | 4080458409 | DIODE RU3M |
| | 4080584504 | DIODE RU3M |
| D636 | 4070639029 | ZENER DIODE MTZJ6.2A |
| | 4080477905 | ZENER DIODE MTZJ6.2A |
| D637 | 4080082406 | DIODE 1N4148 |
| | 4080585600 | DIODE 1SS133ST |
| | 4070124406 | DIODE 1SS133 |
| | 4070134306 | DIODE 1S2076A |
| D638 | 4080082406 | DIODE 1N4148 |
| | 4080585600 | DIODE 1SS133ST |
| | 4070124406 | DIODE 1SS133 |
| | 4070134306 | DIODE 1S2076A |
| D686 | 4070995521 | ZENER DIODE MTZJ6.2C |
| | 4070572801 | ZENER DIODE RD6.2EB3 |
| | 4080478308 | ZENER DIODE MTZJ6.2C-52 |
| D801 | 4070639425 | ZENER DIODE MTZJ8.2A |
| | 4080479404 | ZENER DIODE MTZJ8.2A |
| D802 | 4080627003 | DIODE 1SS356WS |
| | 4071661118 | DIODE 1SS356-TW11 |
| D803 | 4072217116 | ZENER DIODE UDZS-TE-1712B |
| D805 | 4070638606 | ZENER DIODE MTZJ5.1A |
| | 4080476403 | ZENER DIODE MTZJ5.1A |
| D808 | 4072217116 | ZENER DIODE UDZS-TE-1712B |
| D809 | 4072217116 | ZENER DIODE UDZS-TE-1712B |
| D816 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| **MISCELLANEOUS** | | |
| ⚠F601 | 4240059507 | FUSE 250V 4A |
| | 4230288603 | FUSE 250V 4A |
| F601A | 6450005077 | HOLDER,FUSE |
| | 6450705434 | HOLDER,FUSE |
| | 6520019591 | HOLDER FUSE |
| F601B | 6450005077 | HOLDER,FUSE |
| | 6450705434 | HOLDER,FUSE |
| | 6520019591 | HOLDER FUSE |
| A101 | 6450904059 | TUNER, U/V |

| Ref. No. | Part No. | Description |
|---|---|---|
| A1901 | 6450476228 | UNIT,REMOCON RECEIVER |
| | 6450820465 | UNIT,REMOCON RECEIVER |
| K1001 | 6520012974 | JACK,RCA-3 |
| | 6520018914 | JACK,RCA-3 |
| K1003 | 6520015425 | JACK,RCA-6 |
| | 6520022751 | JACK,RCA-6 |
| K1005 | 6520022768 | JACK,RCA-3 |
| | 6520015401 | JACK,RCA-3 |
| ⚠PS601 | 4080465407 | TH PTDCA1BF4R5Q200 |
| SW1901 | 6450034701 | SWITCH,PUSH 1P-1TX1 |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 |
| | 6520018761 | SWITCH,PUSH 1P-1TX1 |
| SW1902 | 6450034701 | SWITCH,PUSH 1P-1TX1 |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 |
| | 6520018761 | SWITCH,PUSH 1P-1TX1 |
| SW1903 | 6450034701 | SWITCH,PUSH 1P-1TX1 |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 |
| | 6520018761 | SWITCH,PUSH 1P-1TX1 |
| SW1904 | 6450034701 | SWITCH,PUSH 1P-1TX1 |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 |
| | 6520018761 | SWITCH,PUSH 1P-1TX1 |
| SW1905 | 6450034701 | SWITCH,PUSH 1P-1TX1 |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 |
| | 6520018761 | SWITCH,PUSH 1P-1TX1 |
| SW1906 | 6450034701 | SWITCH,PUSH 1P-1TX1 |
| | 6450194887 | SWITCH,PUSH 1P-1TX1 |
| | 6520018761 | SWITCH,PUSH 1P-1TX1 |
| ⚠SW601 | 6450590061 | SWITCH, POWER 1P-1TX1 |
| ⚠VA601 | 4071712008 | VARISTOR ERZV14D471 |
| | 4072620609 | VARISTOR MYG3-14K385 |
| | 4072471300 | VARISTOR SVC471D-07ABW7 |
| X161 | 4210121906 | SAW F TSF6376BL |
| | 4210115202 | SAW F TSF6376Y |
| | 4220053907 | SAW F SF6376U |
| X201 | 6450248801 | OSC,CRYSTAL 4.433619MHZ |
| | 6450251122 | OSC,CRYSTAL 4.433619MHZ |
| | 6450820052 | OSC,CRYSTAL 4.433619MHZ |
| | 6520016842 | OSC,CRYSTAL 4.433619MHZ |

## 6103332314 ASSY,PWB,CRT C8WS 1AA0B10S2510B

**TRANSISTOR**

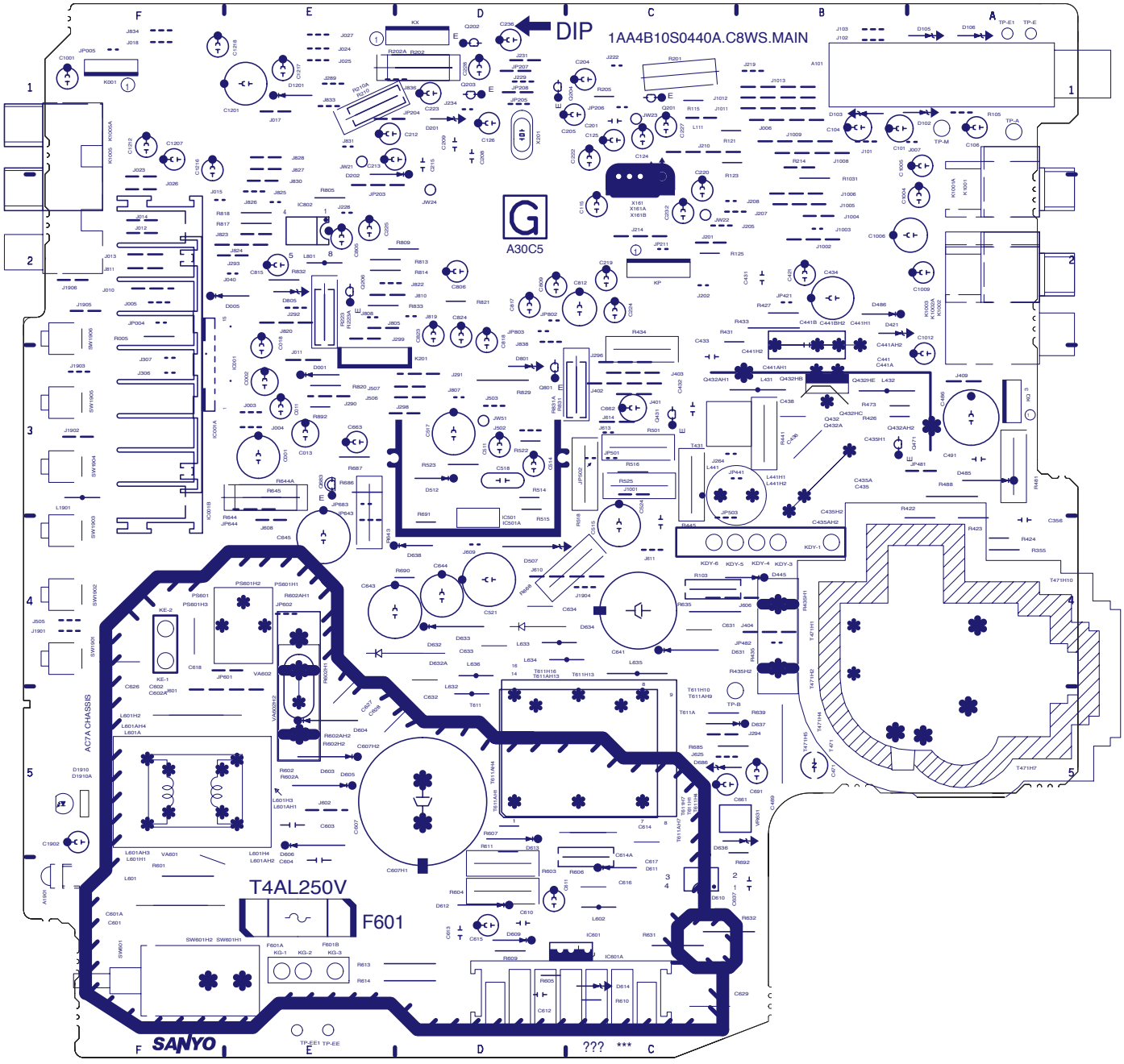
| | | |
|---|---|---|
| Q701 | 4050416507 | TR 2SC2621-D-RA |
| | 4050416705 | TR 2SC2621-E-RA |
| | 4050669903 | TR 2SC2688(1)-K |
| | 4050670008 | TR 2SC2688(1)-L |
| | 4050670107 | TR 2SC2688(1)-M |
| Q703 | 4050416507 | TR 2SC2621-D-RA |
| | 4050416705 | TR 2SC2621-E-RA |
| | 4050669903 | TR 2SC2688(1)-K |
| | 4050670008 | TR 2SC2688(1)-L |
| | 4050670107 | TR 2SC2688(1)-M |
| Q705 | 4050416507 | TR 2SC2621-D-RA |
| | 4050416705 | TR 2SC2621-E-RA |
| | 4050669903 | TR 2SC2688(1)-K |
| | 4050670008 | TR 2SC2688(1)-L |
| | 4050670107 | TR 2SC2688(1)-M |
| Q721 | 4052203115 | TR ISA1235AC1E |
| | 4052203016 | TR ISA1235AC1F |
| | 4051648016 | TR KTA1504S-GR-RTK |
| | 4051345925 | TR 2SA1037AK-T146-R |
| | 4051472215 | TR 2SA1037AK-S-T146 |
| | 4051739615 | TR 2SA1235A1E |
| | 4051739714 | TR 2SA1235A1F |

| Ref. No. | Part No. | Description |
|---|---|---|
| **CAPACITOR** | | |
| C703 | 4041046003 | CERAMIC 330P K 50V |
| | 4040913801 | CERAMIC 330P K 50V |
| | 4031576414 | CERAMIC 330P K 50V |
| C705 | 4041046003 | CERAMIC 330P K 50V |
| | 4040913801 | CERAMIC 330P K 50V |
| | 4031576414 | CERAMIC 330P K 50V |
| C707 | 4041046003 | CERAMIC 330P K 50V |
| | 4040913801 | CERAMIC 330P K 50V |
| | 4031576414 | CERAMIC 330P K 50V |
| C708 | 4041093502 | CERAMIC 1000P K 2K |
| | 4040846505 | CERAMIC 1000P K 2K |
| | 4030772807 | CERAMIC 1000P Z 2K |
| | 4033128334 | CERAMIC 1000P Z 2K |
| C710 | 4040981701 | ELECT 4.7U M 250V |
| | 4041094509 | ELECT 4.7U M 250V |
| | 4041094509 | ELECT 4.7U M 250V |
| **RESISTOR** | | |
| R701 | 4010278107 | CARBON 82 JA 1/6W |
| | 4021089105 | CARBON 82 JA 1/6W |
| | 4020945105 | CARBON 82 JA 1/6W |
| R702 | 4012567516 | MT-GLAZE 390 JA 1/10W |
| | 4011054512 | MT-GLAZE 390 JA 1/16W |
| R704 | 4012559016 | MT-GLAZE 82 JA 1/10W |
| | 4011057216 | MT-GLAZE 82 JA 1/16W |
| R705 | 4012567516 | MT-GLAZE 390 JA 1/10W |
| | 4011054512 | MT-GLAZE 390 JA 1/16W |
| R707 | 4010278107 | CARBON 82 JA 1/6W |
| | 4021089105 | CARBON 82 JA 1/6W |
| | 4020945105 | CARBON 82 JA 1/6W |
| R708 | 4012567516 | MT-GLAZE 390 JA 1/10W |
| | 4011054512 | MT-GLAZE 390 JA 1/16W |
| R711 | 4010654505 | OXIDE-MT 12K JA 2W |
| R712 | 4010654505 | OXIDE-MT 12K JA 2W |
| R713 | 4010654505 | OXIDE-MT 12K JA 2W |
| R715 | 4010091508 | CARBON 2.7K JA 1/2W |
| | 4021033207 | CARBON 2.7K JA 1/2W |
| | 4020924308 | CARBON 2.7K JA 1/2W |
| R716 | 4010091508 | CARBON 2.7K JA 1/2W |
| | 4021033207 | CARBON 2.7K JA 1/2W |
| | 4020924308 | CARBON 2.7K JA 1/2W |
| R717 | 4010091508 | CARBON 2.7K JA 1/2W |
| | 4021033207 | CARBON 2.7K JA 1/2W |
| | 4020924308 | CARBON 2.7K JA 1/2W |
| R723 | 4012560012 | MT-GLAZE 120 JA 1/10W |
| | 4011050910 | MT-GLAZE 120 JA 1/16W |
| R724 | 4011623619 | MT-GLAZE 470 JA 1/10W |
| | 4011055212 | MT-GLAZE 470 JA 1/16W |
| R732 | 4010246403 | CARBON 10 JA 1/6W |
| | 4021033108 | CARBON 10 JA 1/6W |
| | 4021021006 | CARBON 10 JA 1/6W |
| R743 | 4010249701 | CARBON 12K JA 1/6W |
| | 4021027206 | CARBON 12K JA 1/6W |
| | 4020940100 | CARBON 12K JA 1/6W |
| **COIL** | | |
| L702 | 6450079689 | INDUCTOR,150U K |
| **DIODE** | | |
| D741 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |
| D742 | 4072128818 | DIODE KDS160-RTK |
| | 4080627201 | DIODE 1SS35 |
| | 4071490817 | DIODE 1SS355-TE-17 |

| Ref. No. | Part No. | Description |
|---|---|---|
| **MISCELLANEOUS** | | |
| ⚠K701 | 6520017726 | SOCKET,CRT 8P |

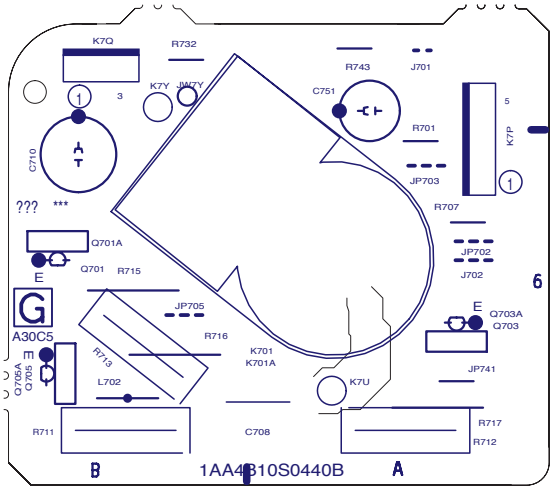
# Component Locations

## Main Board (Parts Side)



# Component Locations

## CRT Board (Parts Side)



# Voltages and Waveforms Charts

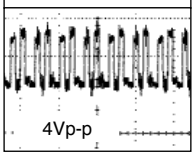
**Note:** Voltages and waveforms were measured with colour bar signal and controls adjusted for normal picture.

## Main Board

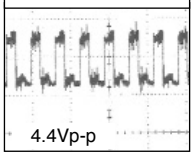
| Q1001 | Q1002 | Q1003 | Q111 | Q122 | Q1901 | Q202 | Q203 | Q206 | Q431 | Q432 |
|---|---|---|---|---|---|---|---|---|---|---|
| E 4.9V | E 4.9V | E 2.4V | E 0.5V | E 0V | E 4.9V | E 5V | E 7.9V | E 1.7V | E 0V | E 3.5V |
| C 0V | C 0V | C 7.6V | C 4.4V | C 0V | C 0.8V | C 7.5V | C 11.1V | C 11.9V | C 15V | C 340V |
| B 4.2V | B 3.5V | B 3.1V | B 1.2V | B 0.6V | B 4.9V | B 5.7V | B 8.5V | B 2.3V | B 0.5V | B 4.0V |

| Q471 | Q472 | Q511 | Q631 | Q632 | Q683 | Q684 | Q802 | Q886 | Q801 |
|---|---|---|---|---|---|---|---|---|---|
| E 130V | E 0V | E 0V | E 6.2V | E 0V | E 26.3V | E 0V | E 3.4V | E 0V | E 3.4V |
| C 28V | C 2.8V | C 2.8V | C 11.9V | C 7.9V | C 26.2V | C 0V | C 0V | C 0V | C 12.5V |
| B 130V | B 0V | E 0V | B 6.8V | B 0V | B 25.6V | B 0.6V | B 3.2V | B 0.6V | B 4.1V |

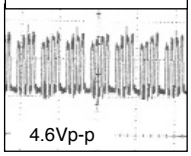
IC201-pin54 <R out>



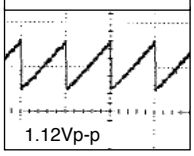

IC201-pin55 <G out>



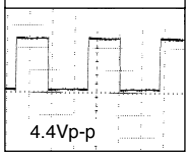

IC201-pin56 <B out>



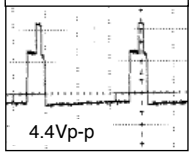

IC201-pin10 <V drive>



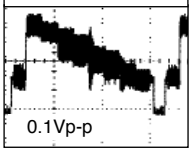

IC201-pin14 <H drive>



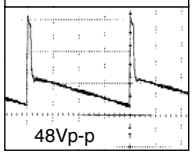

IC201-pin44 <Sandcastle>



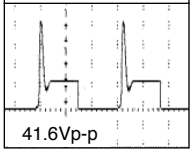

IC201-pin30 <CVBS int.>



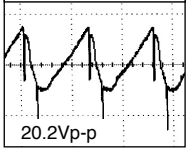

IC501-pin9 <V out>



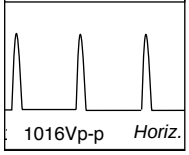

Q431-C <H drive>



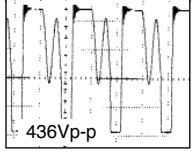

Q432-B <H out>




Q432-C <H out>




IC601-pin1 <Power out>




**IC001 (AUDIO AMP.)**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pin-1** | 0V | **2** | 11.9V | **3** | 0.7V | **4** | 0V | **5** | 0.7V | **6** | 3.9V | **7** | 0V | **8** | 0V | **9** | 11.5V |
| **10** | 5.6V | **11** | 0V | **12** | 5.7V | **13** | 0V | **14** | 5.5V | **15** | 0V | | | | | | |

**IC1200 (AUDIO CONTROL)**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pin-1** | 3.6V | **2** | 3.6V | **3** | 3.6V | **4** | 3.6V | **5** | 3.6V | **6** | 3.6V | **7** | 3.6V | **8** | 3.6V | **9** | 3.6V |
| **10** | 3.6V | **11** | 3.6V | **12** | 0V | **13** | 0V | **14** | 0V | **15** | 7.2V | **16** | 7.2V | **17** | 3.4V | **18** | 3.4V |
| **19** | 3.6V | **20** | 3.6V | **21** | 3.6V | **22** | 3.6V | **23** | 3.6V | **24** | NC | **25** | 3.6V | **26** | 3.6V | **27** | 0V |
| **28** | 0V | | | | | | | | | | | | | | | | |

**IC501 (VERT. OUT)**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pin-1** | 0V | **2** | 26.0V | **3** | 0.9V | **4** | GND | **5** | 11.5V | **6** | 25.2V | **7** | 2.1V |

**IC601 (POWER)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pin-1** | 347V~ | **2** | 0V | **3** | 19.3V | **4** | 0V | **5** | 1.3V | **6** | 0.8V |

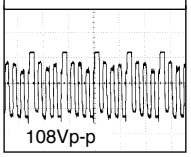
**IC802 (MEMORY)**

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pin-1** | GND | **2** | GND | **3** | GND | **4** | GND | **5** | 5V | **6** | 5V | **7** | 0V | **8** | 5V | | |

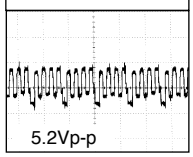
## CRT Board

| Q701 | Q703 | Q705 | Q721 |
|---|---|---|---|
| E 2.5V | E 2.4V | E 2.3V | E 1.1V |
| C -11.4V | C -12V | C 12V | C 0V |
| B 2.9V | B 2.8V | B 2.9V | B 0.7V |

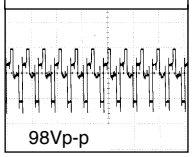
Q701-C <B-out>



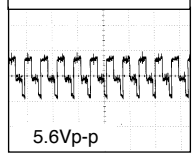

Q701-B <B drive>



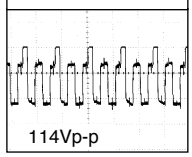

Q703-C <G-out>



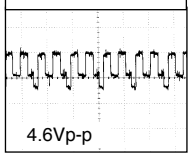

Q703-B <G drive>




Q705-C <R-out>




Q705-B <R drive>



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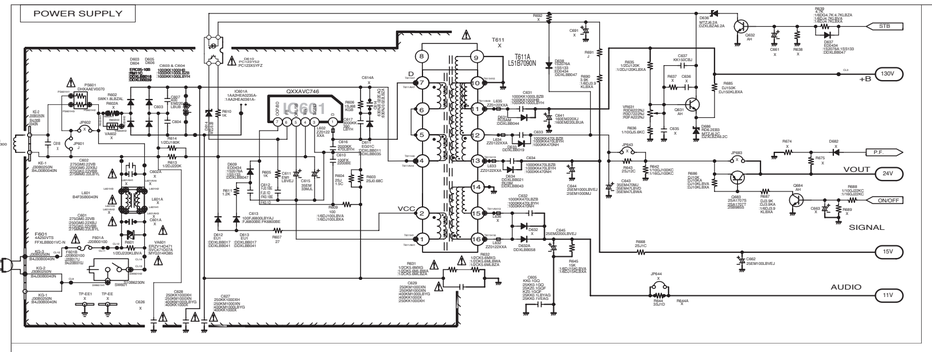
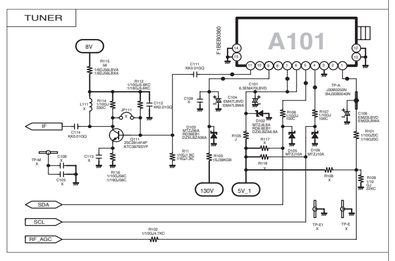
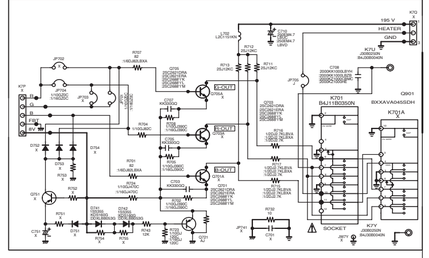



PWB,MAIN C8WS (1AA4B10S0440A)
ASSY,PWB,MAIN BD6R (1AA0B10S251KA)




PWB CRT C8WS/C8VK(1AA4B10S0440B)
ASSY,PWB,CRT C8WS (1AA0B10S2510B)




LIST OF REPLACEABLE TRANSISTORS

25A9335 TYPE)

| | 14TH CODE | 2SA9335 | 2SA1015 | 2SA564A |
|---|---|---|---|---|
| AB | 7T200181 | R | Y,GR | R |
| AC | 7T200182 | Q,R | O,Y,GR | Q,R |

25A1037K CHIP TYPE)

| | 14TH CODE | 2SA1179 | 2SA1037 |
|---|---|---|---|
| AJ | 7T200221 | M/L/M7 | R,S |

25C1740S TYPE)

| | 14TH CODE | 2SC1740S | 2SC9495A | 2SC1815 |
|---|---|---|---|---|
| AD | 7T200183 | Q,R,S | GA,P,K | Y,GR |
| AE | 7G7G0202 | Q,R,S | RA,GA,PA | O,Y,GR |

25C3410K CHIP TYPE)

| | 14TH CODE | 2SC2812 | 2SC2412K |
|---|---|---|---|
| AH | 7T200220 | L/L7 | R,S |

LIST OF REPLACEABLE DIODE

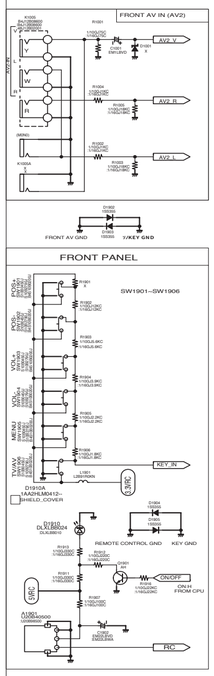
| | 14TH CODE | DIODE NAME |
|---|---|---|
| H | 7DD0001X | 1S1555,1SS270,1SS276,DSA42,1N4148 |
| AA | 7DD0001W | 1S1555,1SS413,1SS276,DSA42,1N4148 |
| M | 7ED0002B | 1SS119,DSA0601,1SS133 |
| P | 7DD0002Y | 1S1553,1S2076A,1S2471,1N4148 |

DIFFERENCES PARTS LIST :

| MODEL | 013 | MAIN UNIT | CRT UNIT |
|---|---|---|---|
| C8WS | 013C8WS | 1AA0B10S2S10A | 1AA0B10S2S10B |
| C8WSA | 013C8WS | 1AA0B10S2S10A | 1AA0B10S2S10B |
| C8WL | 013C8WS | 1AA0B10S2S10B | 1AA0B10S2S10B |
| BD6A | 013C8WS | 1AA0B10S2S1FA | 1AA0B10S2S10B |
| BD6R | 013C8WS | 1AA0B10S2S1JA | 1AA0B10S2S10B |
| BD6R | 013C8WS | 1AA0B10S2S1KA | 1AA0B10S2S10B |
| BD6RA | 013C8WS | 1AA0B10S2S1KA | 1AA0B10S2S10B |
| BD6V | 013BD6V | 1AA0B10S2S1KA | 1AA0B10S2S10B |
| BD6W | 013BD6V | 1AA0B10S2S1KA | 1AA0B10S2S10B |
| BD6D | 013C8WS | 1AA0B10S2S1KA | 1AA0B10S2S10B |
| BD6T | 013C8WS | 1AA0B10S2S1NA | 1AA0B10S2S10B |

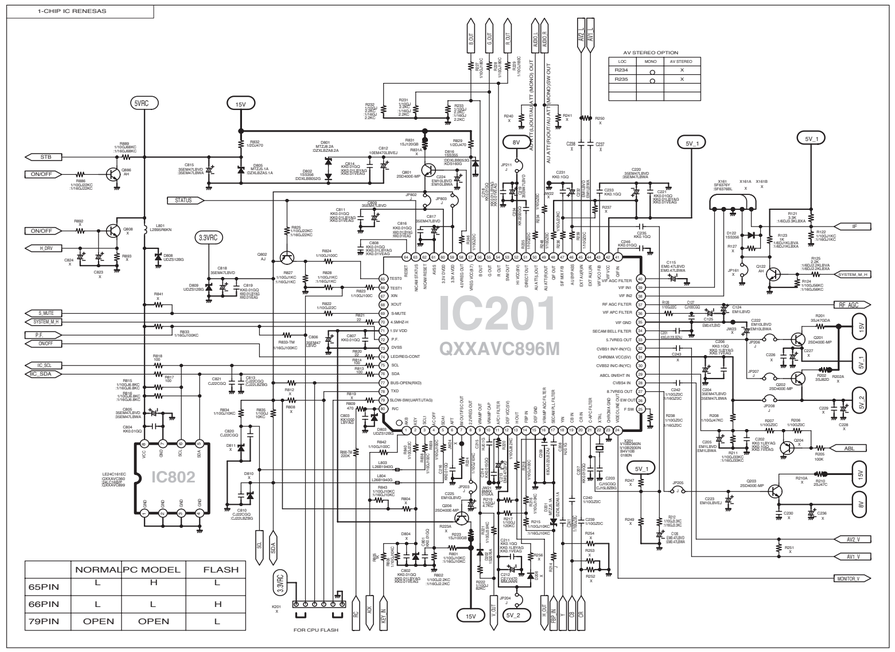
| LOC | 013C8WS | 013BD6V |
|---|---|---|
| W901 | 1AVWW10B03901 | 1AVWW10B04003 |
| | 1AVWW10B15S00 | N / A |

| LOC | C8WS | C8WL | BD6A | BD6R | BD6RA | BD6V |
|---|---|---|---|---|---|---|
| C016 | 1AA0B10S2S10A | 1AA0B10S2S10B | 1AA0B10S2S1FA | 1AA0B10S2S1JA | 1AA0B10S2S1KA | 1AA0B10S2S1KA |
| C018 | 2SD0004 (SVH-680V2D) | | 4SD0001 (SVH-680V2D) | | | 2FSD0002 (SVH-680V2D) 2TVD0002 (UVH-680V2D) 2TWM0002 (UVH-680V2D) |
| C019 | 1SD0008 (SVH-681M2D) | | 1SD0008 (SVH-681M2D) | | | 1SD0008 (SVH-681M2D) |
| JP101 | | | | | | |
| JP102 | | | | | | |
| JP103 | | | | | | |
| JP104 | | | | | | |
| JP105 | | | | | | |
| JP106 | | | | | | |
| JP107 | | | | | | |
| R124 | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC |
| R126 | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC |
| R128 | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC | | 1/4SJ1.8K(LBVLA 1/4SJ1.5K(LBC |
| R502 | 1/4SJ1.8K(LBVLA 33/6C1.8(LBZCL | | 1/4SJ1.8K(LBVLA 33/6C1.8(LBZCL | | | 33/6C1.8(LBZCL |
| R561 | 1/4SJ1.8K(LBVLA | | 1/4SJ1.8K(LBVLA | | | 1/4SJ1.8K(LBVLA |
| V0002 | | | | | | |





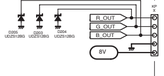


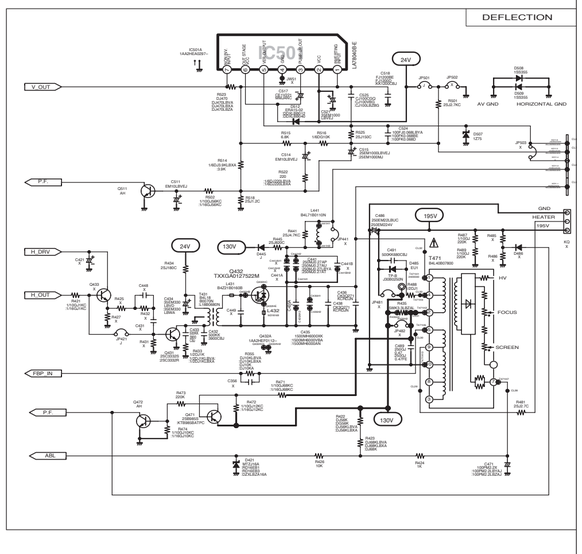


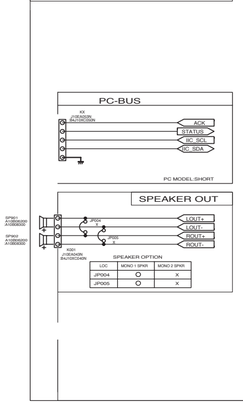

| | NORMAL | PC MODEL | FLASH |
|---|---|---|---|
| 65PIN | L | H | L |
| 66PIN | L | L | H |
| 79PIN | OPEN | OPEN | L |

AV STEREO OPTION

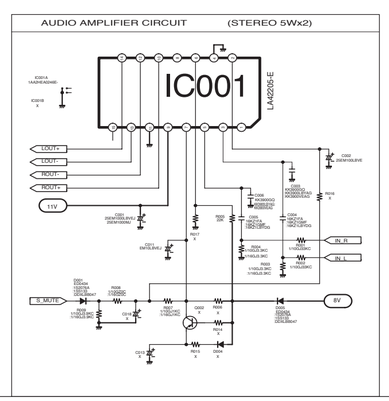
| LOC | MONO | AV STEREO |
|---|---|---|
| R234 | | X |
| R235 | | X |

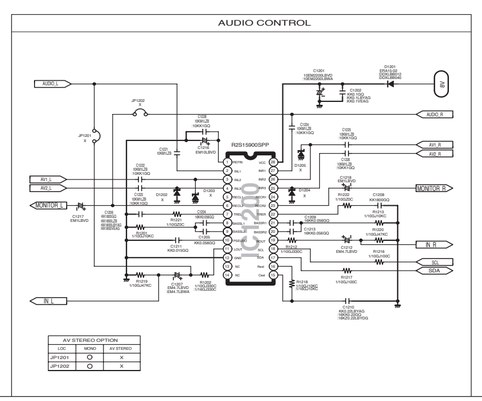


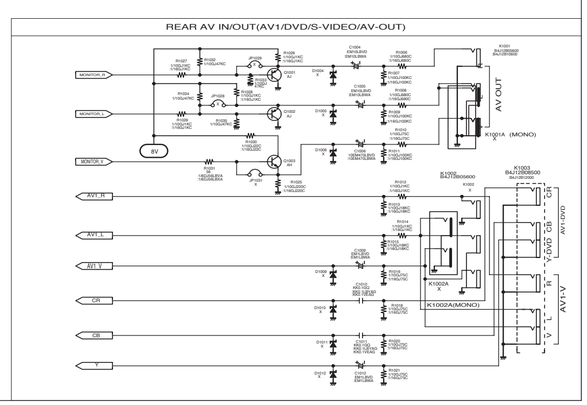

| LOC | MONO 1 SPKR | MONO 2 SPKR |
|---|---|---|
| JP004 | O | X |
| JP005 | O | X |




AV STEREO OPTION

| LOC | MONO | AV STEREO |
|---|---|---|
| JP1201 | O | X |
| JP1202 | O | X |




**THE SERVICE PRECAUTION:**
The area enclosed by this line( ⏚⏚⏚ ) is directly connected with AC mains voltage.
When servicing the area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

SANYO

**COLOUR TELEVISION**

# AC7-A

**CHASSIS SERIES**

SERVICE REF. NO. **CP21VF1-00 CP21VF1-50**

BD6V/BD6W

**PRODUCT SAFETY NOTICE:**

Product safety should be considered when a component replacement is made in any area of a receiver.

Components indicated by a mark ⚠ in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

**CIRCUIT DIAGRAM NOTICE:**

1. All resistance value are in ohms, K=1,000, M=1,000,000.
2. All resistance rated wattages are 1/6W unless otherwise noted.
3. Excepting electrolytic capacitors, all capacitance values of less than 1 are expressed in $\mu$ F and more than 1 are pF.
4. All capacitance rated voltages are 50V unless otherwise noted.
5. All inductance values are in $\mu$ H.
6. Voltage readings take with a "VTVM" are from point indicated chassis ground. Voltage readings taken by using PAL colour bar signal are with all controls at normal position. Some voltage may vary with signal strength.
7. Waveform were taken with PAL colour bar and controls adjusted for normal picture. Waveforms were taken by using a wide band oscillo-scope and a low capacity probe.
8. This circuit diagram covers a basic or representative chassis only. There
   may be some components or partial circuit differences between the actual chassis and the circuit diagram.
9. Parts specified with "X" are not installed in this model.
10. Parts specified with "J" are just jumper wires.

11. Expression of capacitance and resistance in circuit diagrme.

Capacitance (Example)
1000 C M 2000 D
- Characteristic
- Capacitance value (220pF)
- Allowable error (±20%) — J= ± 5%, K= ±10%, M= ±20%
- Kind (Ceramic) — T, A, U, D: Electrolyte; C, K, B: Ceramic; F: Mylar film; M, N: Polypropylene; Z: Metalized paper
- Rated voltage (1,000V)

Resistance (Example)
1/2 N J 1.2
- Resistance value (1.2Ω)
- Allowable error (±5%) — D: Carbon; N: Metalized carbon; S: Oxied metalized; W: Wire wounding; C: Solid
- Kind (M.carbon)
- Rated wattage (1/2W)

**TRANSISTOR, DIODE AND INTEGRATED CIRCUIT TERMINAL GUIDE**

C: COLLECTOR
B: BASE
E: EMITTER

A: ANODE
K: KATHODE

**CHIP COMPONENTS**
TRANSISTOR
DIODE
RESISTOR

**PARTICULAR PARTS SYMBOL**
FUSIBLE RESISTOR
NON POLE ELECTRIC CAPACITOR
POSISTER